

EDUCATION
AND
VILLAGE IMPROVEMENT



EDUCATION AND VILLAGE IMPROVEMENT

BY

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WITH A FOREWORD BY

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TO
ALL WHO POSSESS
A VISION OF PEACE, JOY AND BEAUTY
FOR INDIAN VILLAGE LIFE

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FOREWORD

A STUDY of the subjects on which books and articles are written, published, sold, and read gives a fairly reliable index of what the literate members of a certain country are thinking and talking about. In India a comparison of the books published today with those available twenty years ago will furnish much food for thought and a good deal for hope as well. At that time we would have looked in vain for publications on such subjects as 'Rural Reconstruction', 'Village Uplift', and the like,—terms that were not even known in those days. At the present time these words are slogans found in every newspaper and magazine, and form the topic of discussion in an increasing multitude of books.

Among such publications, Mr Moomaw's book should hold a worthy place. The author combines a thorough knowledge of agriculture and rural science obtained in the west with years of practical experience in an Indian agricultural and vocational school. The result is that these chapters are written with a genuine background of Indian life and thought. Too many books by Europeans leave the impression of being chunks of unassimilated western material; in this, however, every page carries vivid marks of first-hand experience, and is 'dyed in the wool' with the local colour of the Indian country-side.

The vocational Training School at Anklesvar has a proud record of actual achievement, but even so

FOREWORD

Mr Moomaw's experience is not confined to the conditions of a school community. He has tarried in many of the villages of Gujarat and has learned through conversation and friendship the difficulties and aspirations of the peasant. Together with the staff and students of the Training School he has been able to carry out a number of surveys and tabulate fresh information in a variety of subjects connected with rural improvement. When he recommends any daring innovation he speaks from the weight of experience.

A. B. VAN DOREN

N.C.C. Office, Nagpur
November 1937

PREFACE

WHEREVER there has been permanent village improvement we usually find that the rural school has performed a useful service in shaping the minds of the children and through them influencing their parents. Village life in India today requires that teaching in rural schools should undergo a vital change. In addition to being an institution for mental training, the school must become a channel through which new life may flow into the village. Some teachers have already observed that as they bring the instruction of their classes to impinge upon the life currents of the village, the purely teaching functions of the school become vitalized and the standards of scholarship are improved.

The worth of education in village improvement lies in the fact that it awakens and develops the latent powers that already exist in the village. The uplift movement often tends to be imposed from the outside. When 'uplift' is thus brought in as a ready-made 'scheme', which the people themselves have had little or no part in preparing, it often fails to enlist their support and loyalty. Through suitable education we uncover springs that lie hidden, even in backward villages.

The teacher will often find that the most effective way to teach certain lessons is through some practical village service or demonstration in the presence of both pupils and parents. The various chapters of this book suggest examples as to how the school-village relation-

PREFACE

ships may be so established that the teaching of the school will impinge directly upon some of the problems of village improvement.

The various chapters represent in brief form the contents of courses in Rural, Social and Economic Problems conducted with the students of the Vocational Training School during the years 1930-37.

I am deeply grateful to the Staff of the Vocational Training School, to many village teachers and to former students for their generous co-operation at all times. It is a pleasure also to acknowledge the encouragement received from various officers of the Departments of Education, Agriculture and Co-operation. Finally I am especially grateful to Mrs Moomaw for her help in innumerable ways.

It is hoped that the book will be helpful to teachers, students and others in acquiring a measure of rural-mindedness so essential to fruitful service.

I. W. MOOMAW

*Ankleswar
Brouch District*

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GENERAL NOTE ON PRICES

Because of the fluctuating state of prices in India in 1947, it has not been found possible to correct them throughout this edition. Wherever prices are given in the text, therefore, it should be remembered that they are 1939 prices and allowance made for a present-day increase of about 250 per cent.

AWAKENING INTEREST IN RURAL LIFE

IN village India there are at least five different classes of people. To envisage these and the place that each occupies will help us to understand the task and scope of village improvement.

In the first group are the professional land-holders, the *inamdars* and all who possess large estates. These men seldom manage their own cultivation, but sublet the land to tenants. They often enjoy an additional income from the lending of money or from some business enterprise. Their income is sufficient. They can incur necessary social expenses, educate their children and procure the usual amenities of life. If village uplift has any interest for them it will probably be an altruistic interest rather than concern for economic gain.

Having large tracts of land and controlling much of the village wealth these people often hold the keys to progress. When possessed of a spirit of public service they may become a significant factor in rural reconstruction. They usually hold positions on school boards, co-operative credit societies and other organizations for the improvement of village life. By encouraging schools and medical aid for all, improved cultivation and more liberal terms of land tenure, they can relieve much distress and lighten the burdens of many. On the other hand, if they hold large areas of poorly-farmed land, so as to restrict both production and employ-

ment, they contribute directly to the low standard of village life.

A second group includes India's 'born farmers'. Here we find the Pattadars, Kanbis, some Brahmins, the Jats of the Punjab, Vellars of the Tamil and Reddys of the Telugu country, to whom agriculture is a manner of life.

They usually own land, and because of their native love for the soil and pride in good husbandry, they either farm it themselves or closely supervise it when entrusted to others. Their spirit of industry and thrift deters them from mortgaging their land and getting into debt. They take pride in good oxen, and their equipment, though simple, is usually adequate for efficient husbandry. These people wherever found are usually India's best farmers. The village worker can learn much from their skill and spirit of thrift. Were a larger percentage of the people in this class, the task of rural education and village uplift would be less urgent.

A cultivator whom we visited recently is typical. He farms only twenty acres, but his spacious, well lighted house and well kept oxen indicated prosperity. He spoke with pride about the care of his oxen, saving of manure and the treatment he gives his land. 'Soil treatment', he said, 'is the greatest factor in farming. Treat the land well and it will not fail you.' In his fields we saw crops that promised a yield nearly twice as much as that of some neglected fields nearby. Several buffaloes are kept and the family makes ghee for home use and for sale. He hopes that his eldest son, now at school, will become a farmer. He is not in debt but loans some money to his neighbours at 9 per cent interest per annum.

AWAKENING INTEREST IN RURAL LIFE

Coming to a third group we find those who take less pride in agriculture and rural life. Many here are descendants of early warriors and traders who later took to farming as a last recourse. Here are also those who, by sacred literature, are forbidden to touch the plough. Among them are some good farmers, but in general they seldom go out to see their fields, preferring to turn them over to hired servants or tenants. Their tools and oxen often bear the marks of neglect and their land becomes poorer from year to year. Recently many have got heavily into debt, mortgaging their land to its capacity. In a recent survey it was not possible to find more than five farmers in a group of fifty whose land was free from mortgage.

In the fourth group are the village craftsmen. Until recently these men and their families could earn a modest living from their various trades—weaving, carpentry, tanning, stone cutting, tailoring and other minor crafts. They were essential village servants and each enjoyed some status and security in the old *jajmani* system. Now with the rise of quick transportation and the free flow of machine-made goods from nearby towns, these people have been left in a precarious condition. We shall refer to the needs of village craftsmen again in the discussion of cottage vocations.

The fifth and by far the largest group includes the great multitude of good people who seem to have been overlooked in the distribution of social and economic privileges. We know these unfortunate people best of all and it is their sad plight, perhaps more than anything else, that has given rise to the present interest in village improvement. Their little huts crowded off to one side of the village are often built on land control-

riots but the rural man has gone on quietly, providing food and clothing for all. If after paying his rent and other expenses there remained but little for food or clothing for his own family the town-dwellers heard no complaint.

The nature of agriculture as an occupation exposes country people to much risk. If the monsoon fails or frost comes the people are at once thrown into distress. At times of illness, distance often prevents their going to public dispensaries. Scattered population and pressure of farm work make it difficult to maintain efficient schools in villages. Recent social and economic changes, while good in themselves, have often been to the disadvantage of rural people. Cheap transportation has tended to flood villages with cheap goods, slowly strangling cottage industries. The old but useful panchayat system is disappearing from many places, and in its stead there arises the costly system of litigation.

Whether we wish it or not, change is coming to the villages. Schools, quicker transportation, cheap machine-made goods, and the spread of scientific information all tend to produce social and economic change. Rural people everywhere are not inclined to make quick adjustments, and changes that might bring improvement often work to their disadvantage. To meet this need for more facile adjustment to change, the term 'rural reconstruction' has been coined. It has an appeal to the people, for it suggests preserving the old. In its full sense, however, village reconstruction must mean the preserving of all that is good in our heritage against both novelty and decadence. It must also mean adjustment to change and the laying of a sure foundation for a more satisfying rural life in the future.

The need for such adjustment is apparent. Laboratories have developed methods for greatly increasing crop yields, yet the problem of hunger is as real as ever.¹ The more enterprising young people are naturally attracted to cities when they have finished their school or college education, and the villages in this way lose some of their best leaders. Science and social change tend to outrun rural progress, and village reconstruction is an effort to bring all three into line.

It would be unfair to refer to this as a new effort. In the year 1821, William Carey, a learned missionary and distinguished botanist, founded what later became the Indian Agricultural Association, in an effort 'to relieve distress among rural people through providing improved methods of husbandry'. In more recent years the Government have been taking steps through irrigation, cattle farms and co-operative credit societies.

Rural life, like a fabric, is woven from many threads. Sometimes workers have taken hold of but one thread in an effort to 'reform' it. Experience has taught us the need for a penetrating educational effort which will touch life as a whole and quicken the desire for improvement. If co-operative credit societies are to succeed there must be an intelligent will to co-operate in all affairs of village life. If the school is to succeed it must provide instruction and inspiration for the entire village.

¹ P. K. Wattal, *The Population Problem of India*, p. 9.

CHAPTER II

EDUCATION AND THE RURAL MIND

THE villager himself is rural India. It is he who lives on in the village after uplift meetings have adjourned and the workers have gone to their homes. It is he who has produced the villages we see today and when they are changed it will be largely through his efforts. To a great extent, village improvement comes through a change of the village mind and will. What do the farmer and his wife think about suggested improvement? Has their interest been quickened so that they come forward to support it or do they merely tolerate it, viewing it with suspicion and mistrust?

Effort and money have been wasted in village service because we have too often overlooked the factors of personal interest and readiness so essential to improvement. It is an error to assume that the villager is ready to act on any suggestion we may give him. If improvement is to take a hold and touch life deeply there must be a feeling of interest and need among the people themselves. The experienced worker will see first of all, not poor crops nor 'illiteracy', but a rural people having a meaningful past with traditions and ways that have come to them through long experience. These they are reluctant to change, except as they are given opportunity to co-operate in working out a better way that they can trust.

Advice and lecturing accomplish little. A common



error in beginning village service is to declare that everything seen around the village is wrong and improvement requires radical change. Listening to such a lecture, even though politely nodding assent, the people really build up a mental resistance to change. The more severe the attacks against their traditions the more secure will they build their mechanism of resistance.

One worker, after telling some people for a full hour about the evils of their village, departed suggesting that they 'mend' their ways and 'make the necessary transformation within three months'. He would then return to advise them what their next steps should be. The work he had assigned to them included sending all the children to school, improving the cattle, cleaning the wells and levelling their fields. Any illiterate farm labourer present might have suggested that there was only space in the school to accommodate less than half the number of children and that to improve the cattle would require at least six years, instead of three months.

With the courtesy so characteristic of rural people they listened in silence while the speaker flayed them. At the close of the lecture an old man spoke out: 'Sir, your words are filled with wisdom. We are all monkeys and villains in this village.' Several others then accompanied him to the end of the village and thanked him for coming to them. He had seen their backwardness; they were seeing traditions made sacred by centuries. Naturally there was no change nor improvement as a result of the lecture. Appreciation and sympathy are the keys to the rural heart. On this point Dr John Goheen wisely asks: 'In all of this uplift work . . . are

there not some features of village life that ought to be conserved?... Is there nothing to be saved and utilized out of this heritage of hard won life?' ¹

SOME RURAL TRAITS

(1) Rural people are generous. Schooled in adversity they accept sharing, within their group at least, as a normal part of life. When work is scarce it is the practice among labourers in some villages to take turns, so that all may have a subsistence share. Those who travel in villages are often touched deeply by the expressions of hospitality. Some will incur debt to provide for their guests things that they rarely have for themselves.

(2) Other characteristics are infinite patience and ability to endure hardships. The villager is often called lazy, but if we allow for the effects of malnutrition, illness and recurring disappointment we might conclude that under the circumstances he displays remarkable energy. A man may suffer defeat after defeat, lose his fields one by one and still be ready to start over again each season without murmuring. In an area where field labourers receive only coarse bread as food twice a day, folk-verse seems to have been born: 'He who eats porridge and milk can travel only to the edge of the village. He who eats rice may travel to the field. He who eats bread can reach the field and labour all day.'

(3) There is also a measure of family and group loyalty. The joint family may have defects in the modern world, yet within an economy of poverty there is much

¹*New and Times*, January 1936.

to commend it.¹ Houses may be inadequate, but we find no one without a 'home'. Farming being purely a domestic occupation, the entire family is often joined in common enterprise. Whatever concerns one, concerns all. That there are factions and animosities few would deny, yet in any village we may find family devotion and group loyalty which if properly guided can do much for the improvement of life.

(4) There is a strong reliance upon tradition and custom. This tends to give stability and guidance but when followed too closely it becomes an enemy of progress. Change, whether for good or ill, is distasteful to those guided by tradition. Any who depart from the customary path are met by a counter-thrust that would force them back into the rut. The African folk song is suggestive:

'A well-worn path is a very good thing,
It surely must lead to the house of a king:
And so with our customs and ways of yore,
'We do what the millions have done before.'

One man told with a measure of pride that the plough he uses had been in the family for two generations. That it was worn away to such an extent as to be no longer capable of efficient work and to go on using it placed an undue burden on the man and his oxen, did not seem to matter. Having been in use so long there appeared to be no need for changing it. A field within the shadow of an Agricultural Station has been planted with the same crops and in the same manner as long as anyone can remember.

¹ For a full discussion of this point see article by Dr W. H. Wiser, in *The Allahabad Farmer*, December 1936:

One of the chief objections to tradition as a guide is that it blinds us to the reason for things that occur and makes us incapable of adjustment. Crops fail, epidemics come, prices rise and fall, but the man guided by tradition looks largely to the past for solace and release. That there is usually a natural cause does not occur to him.

(5) The uncertainty of agriculture and life guided by tradition has led the villager to attribute many events to Fate. He is a sojourner here for but a short time. Life is only a bird of passage. If he suffers disappointment here the future may offer some reward. Being so short, the present is scarcely worthy of serious concern. Suffering and pain are accepted as his lot. Things are as they were designed to be. His own concern or neglect does not change them. To put up with life as it is seems the safe and honourable thing to do. He can get on without improvements. Unfortunately he does not see the implications of this attitude for his children who will live in a changed world. Some will ridicule this reliance upon tradition and Fate, others may try to ignore it entirely. The worthy and successful way to meet it is through understanding, reverence and infinite patience.

(6) Climate also has had a part in shaping the habits and attitudes of rural people. For centuries it seemed necessary only to stir the soil of India's fertile river plains, and then sow and reap. Crops were fairly certain. Gradually the plains became less fertile, and as population increased, people were forced to cultivate poorer lands in the interior. These have been cropped from generation to generation until from sheer exhaustion much soil can respond only feebly to the farmer's plough.

EDUCATION AND THE RURAL MIND

In the hill country of North India the people have shown more enterprise. Forced by topography and the rigorous climate, they have built walls and terraces and carried manure, so that they still grow good crops of wheat on the steep hillsides that would otherwise remain barren. Those who dwelt on the rich plains would have considered such lands useless. Accustomed to merely accepting the kindness of nature from century to century, India's plain dwellers are not well prepared to extract a satisfactory living from an over-populated, and in many places, exhausted soil. During the centuries insect pests have developed, erosion has been unchecked and the virgin fertility of the plains has decreased. Now only by learning to test, conserve, plan, select and reject can we hope to grow satisfactory crops.

ATTITUDE TOWARDS RURAL AND URBAN LIFE

Village people tend to regard rural life as inferior to urban life. In towns things move more rapidly and there is more glamour. The streets are improved and lighted and there are shops filled with many-coloured gadgets. There are better schools and hospitals. The rural man naturally concludes that urban life is superior and he tends to view it with admiration, often to the neglect of his own village and its needs. Merely to admire the city will not save the village. Rural people must set their own standards. Every village must have clear aims for sanitation, health, reduced social expenses and education. Whatever aims are chosen, they must be a part of the curriculum in the school, to be taught until the outlook of youth is changed.

A great need in every village is wholesome recrea-

tion. It is only natural that young people chafed by the monotony of village life escape to the town at the first opportunity. A common tendency is to buy ready-made recreation and amusement in nearby towns and cities. The amazing interest that unlearned men show in taking chances on cotton futures shows their hunger for some thrill in life. The more sophisticated may of course speculate for financial gain, but the average villager often stakes his anna largely for the thrill he gets from being a player in a game of chance.

Recently a little health exhibit was suggested for a small village. It was the harvest season and we were not sure if many could attend. No special announcement was made. It was felt that those who had time and cared to come might do so. To our amazement almost the entire village turned out for a joyous afternoon of games and health instruction. The great open spaces of the villages give the people advantages in recreation that urban people would covet.

Likewise in health and social customs there is need for setting standards for village life. Malaria, skin diseases and dysentery need not be accepted as the peculiar heritage of rural people. They can be removed more easily from the country-side, in some respects, than from the cities. A two-thousand-rupee wedding may be the standard for some castes, but it is a rare cultivator who can afford to pay more than two hundred rupees. The people themselves must set up standards and goals toward which they can strive. To promote this is one of the most useful forms of service that a teacher or uplift worker can give.

CHAPTER III

EDUCATION AND VILLAGE IMPROVEMENT

THE GOAL OF VILLAGE EDUCATION

EDUCATION, which utilizes the villager's past experience, takes account of his present attitudes, and cultivates his self-esteem may become the most potential factor in rural improvement. The man whose mind is benumbed by a barehand struggle against what seems like a frugal Nature and an unkind Fate, demands first of all to be appreciated and understood. Fear of the unseen often causes him to seek the safe course and look pathetically to the past for guidance. Broad and sympathetic education that will quicken the mind, help to end despair, and lead to faith in a creative God who wishes His children well, can do much to develop a desire for improvement.

When teachers representing widely selected areas were asked about the purpose of the village school, they showed much difference of opinion and some confusion. A few of the more common answers are noted below in order of their frequency.

1. 'To teach the children to read.'
2. 'To teach children to read and write.'
3. 'To educate the people so they will not be cheated by the moneylenders.'
4. 'To prepare for admission to higher schools.'

the vagueness sometimes found in village school administration. The following suggestions are offered with the understanding that no definition can fit the needs of every village. In general, there should be a fixed purpose for each school, and this will vary from village to village. If the following suggestions serve only to provoke further thought or even criticism, I shall feel rewarded. They represent in a large measure the findings from discussions with teachers.

It is the task of the village school to provide such educational experience as will prepare boys and girls for a more abundant life—economic, civic, social, moral and spiritual. The textbooks are essential, but the teaching of books is only part of the teacher's task. The mental, physical, moral and spiritual growth of the children is the goal of the school. The wise teacher first looks to the child and his environment and second to books. The school must extend a helping hand to the entire village so as to create the type of environment in which the children can develop. The teacher will not only see children as they are in his classroom. He will see them and their parents in all the experiences of their daily life. Their character, health, food, clothing, recreation and homes are all matters of concern to him. We are told that 'knowledge is power'. This is not entirely true. Knowledge is power only if it is useful. It is the use of knowledge in the daily life of people that becomes power.

Parents also have much to share with the school. It is their own institution. In every village there are those who should be helping the teacher in various ways. They may lend illustrative material and conduct experiments in garden and field plots. Those who have

travelled may share their observations. Parents should be informed of the teacher's aims in his hygiene classes that they may encourage their children while at home to develop proper health habits. The indifference of parents is often distressing, but we cannot hope for permanent rural improvement until both parents and teacher co-operate in conducting a school that includes the whole of village life within its scope. The teacher will then become the indispensable and highly respected servant of all as he helps to heal some of the festering sores in social and economic life.

Some will ask: 'If the teacher is to help in supplying the social and economic needs of the village, how will he find time to teach his classes?' Experience has shown that the teacher who takes an interest in the improvement of village life usually has the best examination results. He is alert and efficient. The children in class catch his inspiration and respond quickly. Parents unconsciously rally to his support. There is improvement in attendance. The progress of the school becomes the concern of all. On the other hand, if the lessons of the schoolroom are not intimately related to life so as to inspire the pupils' interest, the children and teacher may wander for long months in the dark jungle of words and symbols yet make little progress.

'In the village of — I went for an early morning walk with the teacher. It is his practice to call once in a fortnight at each home from which pupils come. Being the fever season, he carried a few quinine tablets and a clinical thermometer in his pocket. During the short hour he prescribed medicine for two cases of fever, spoke words of cheer to an old man who was ill, kindly turned back several children who had left for school

without bathing properly, encouraged a man who was constructing a well, visited a garden where several of the older boys were at work and counselled some parents who were inclined to keep their children from school without adequate reason. This short visit clearly indicated the large and friendly place that this teacher and his one-room school hold in the life of the people.¹

THE TEACHER'S QUALIFICATIONS

The teacher's character and personality are perhaps the two greatest factors in education.² Often it is he who provides the guiding spirit of life in the village. His responsibility is usually greater than it would be were he an assistant in an urban school. There are inconveniences and often health risks that the urban teacher does not experience. To meet the many demands of his profession he needs adequate training. He should have access to the best methods in education since the amount of time that rural children can spend in school is often limited. For the protection of himself and his family and for the help he can give to his village neighbours he will need training in first-aid, and experience in the preparation and use of simple medicines. He needs a wide knowledge of agriculture and village crafts so that he can relate his service in the school to the daily life of the people.

The successful teacher must be a keen student with eyes that see and a heart that feels. His training is never completed. One of the greatest hindrances to the progress of man is the idea that education naturally ends

¹ From a supervisor's diary.

² A. Mayhew, *The Education of India*, p. 148.

at a given age, or at the time of leaving school or college. Teachers frequently give up regular study after leaving the training college and children tend to assume that schooldays are the only days for mental growth.

There is an ancient proverb credited to a priest which says: 'Give me a child until he is seven and you may have him after that.' Many infer from this that childhood is the only time for learning. While a child may have learned some principles that will help to guide him for the rest of his life, a more correct proverb would be: 'Give me a child until he is seventy.' Experience has shown that people can learn readily up to mature age. Tests by Professor Thorndike have proved that adults may in some respects learn more rapidly than children. Childhood is the most convenient time for learning, but it is only the beginning. To develop learning attitudes in children, the teacher must be a keen student, whatever his age or experience.

WHAT PARENTS DESIRE FOR THEIR CHILDREN

It is a hopeful sign that many parents desire education for their children. There are many who send their children many miles to school and deprive themselves of food in order to buy books. We recently visited a school where the parents eke out enough to buy grain for one meal a day by gathering wood in the jungle and carrying it to town for sale. They kept their children in school even though they were badly needed for work at home. Some who toil in the fields for a few annas a day will often make any sacrifice to get money for a son's examination fees.

It is a common sport for some to blame the 'educational system' for every evil. One wishes that the cure

for unemployment and the ways of rural progress were as simple as the critics seem to believe. No doubt there is need for an early adjustment in our educational goals. Often educationists themselves are among the first to see this need, but the type of education in force at a given time represents the desire of the people to a large extent. If the schools are 'bookish' to the neglect of personality and community life it is probable that it is because the parents' demands for their children can be met only in this way. It is often parents and local committees who rise up to 'slay the prophets' when an adventure of a more practical type is suggested. Classes with an agricultural bias, for example, are not primarily an effort to make farmers of the boys but to adapt education to the life needs of the people. Yet many parents and local committees would strangle these classes at the first opportunity if they were not protected by Government.

One of the first steps in village improvement is to help parents to choose for their children the kind of education that will be most useful to them. It is still a new and strange doctrine to many that the village may become a place of culture and beauty, and agriculture a profitable and interesting occupation. Parents must see in the school a channel for the enrichment of village life and not a means of escape from it. This can best be accomplished through sympathetic demonstration of what liberal schools can do. Very little equipment is needed. In many respects the village is the best setting for an ideal school. The alert teacher will find there nearly all the equipment that he needs. The syllabus already assumes that the village setting is used.

EDUCATION AND VILLAGE IMPROVEMENT

PUTTING VILLAGE LIFE INTO THE CURRICULUM

The inexperienced worker finds in the average village a maze of interrelated problems, and there seems to be no place to begin school-village service. To meet this need the Rotation plan has been developed. By this plan various phases of life are stressed by the teacher and class, one after another. Used widely for many years the Rotation plan seems to represent our best experience in relating the school to life. It is not a new subject in the curriculum. Rather, it is an orderly plan for bringing the cultural advantages of the school into the homes of the people.

There is no ready-made plan to fit every school. The following outline is suggested as a type. The teacher in co-operation with the pupils and their parents should be free to adjust it to fit his own village. It is this adjustment of the school curriculum to the village that quickens pupils' and parents' interest and makes education helpful. The tailor makes garments to fit his customers, and the teacher must be free to adapt his service to the needs of the people.

PLAN FOR A FIVE-YEAR ROTATION

FIRST YEAR : *Village Fields and Gardens.*

SECOND YEAR : *Village Birds and Animals.*

THIRD YEAR : *Village Homes.*

FOURTH YEAR : *Village Health and Recreation.*

FIFTH YEAR : *Our Neighbours and How They Live.*

In some schools only four divisions are made. One division in its various phases is chosen each year. In school and out of school the children are taught many of their lessons in relation to that special phase of life.

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Thus during a period of four years the teacher and pupils consider the chief topics of village life. In the outline, we suggest one special topic for each entire year, as village life moves in one-year cycles and the teacher usually wishes to take advantage of seasonal changes for the sake of interest. Where there are several teachers in a school, different subjects of the Rotation may be used concurrently in different classes. Where there is but one teacher it will only be practical to use one subject at a time. Even in this way each pupil will have an opportunity to cover the full Rotation during his years in school.

FIRST YEAR : *Village Fields and Gardens*

The school syllabus already provides that gardening shall be taught. Agriculture in India furnishes the essentials of life, food and clothing for over 70 per cent of the people. It is essential, therefore, that all rural schools teach agriculture and gardening well.

I. *Preparation*

Have the pupils prepare lists of the chief plants growing in the village. They may be classified as wild and domesticated plants, cereal grains, fibre plants, fodder plants, fruit, vegetables and flowers.

Next study the plants according to their economic importance to the village. This will require individual thinking, one of the chief aims of education.

Are the yields satisfactory? What might be done to improve them? Use the experience of the more successful cultivators. The teacher may help the pupils to secure bulletins, seed catalogues and other literature from the Agricultural Overseer and libraries. Many helpful Government bulletins are available in Indian

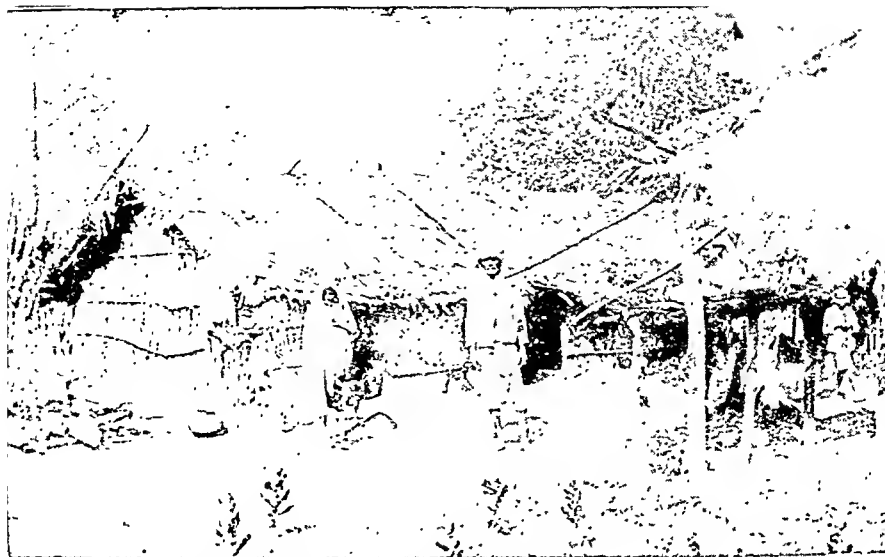
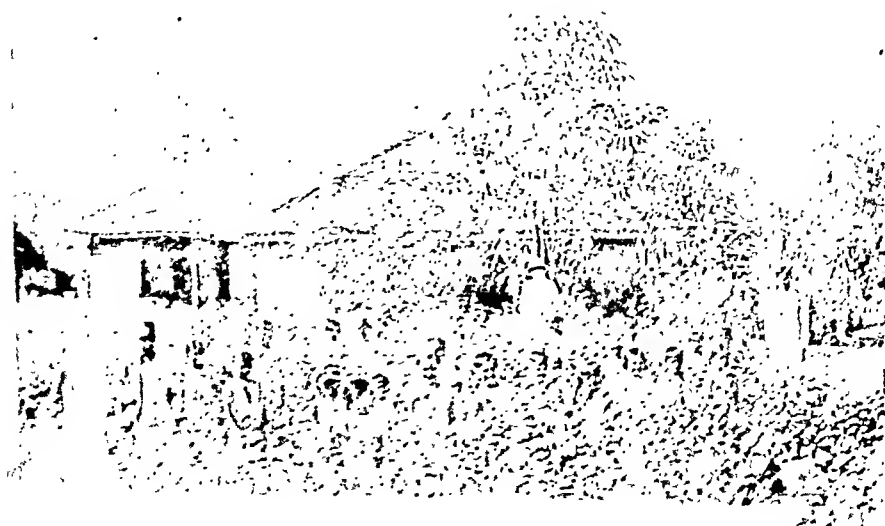


Plate III 'WE KNOW THESE UNFORTUNATE PEOPLE'

(See p. 3)

Plate IV A SCHOOL GARDEN



languages. With interest properly aroused pupils will read these eagerly.

II. *Activity and Experiments*

Purpose:—To study the growth of plants and to learn methods for improving them.

The work can be done by classes or by individual pupils. In the beginning, the plan should be as simple as possible so that the work may be done successfully. Almost every village school has a plot of ground that may be used. Failing this, an alert teacher will find among his friends someone who will devote a small plot to the work of the school. For the older pupils, who can work independently, the best plan is to have a plot of ground at home. The teacher can visit these plots occasionally as he visits the homes of the parents. The teacher-pupil-parent contacts that arise through home garden projects are of great value.

Teachers who follow this plan have many interesting and rewarding experiences. One farmer refused at first to give his son a plot of land to cultivate. He agreed, however, after a few words of kindly persuasion by the teacher. During the year he became deeply interested in several experiments that the teacher and his son were conducting and arranged to be present to 'lend a hand' whenever the teacher would call. Uneducated, but wise in the things of real worth, the farmer saw the improvement both in his son and in the plants he was growing. The following year, in a humorous vein, he offered to turn over all his land to the teacher and his son to manage.

Near to the school the smaller children, and others who had no land at home, made a garden that was a

joy to them and an inspiration to the entire village. Many people remarked on its beauty as they made plans for like improvements at their homes and in their fields. It is needless to add that thereafter funds for improvement in the school were available, and the teacher became one of the most honoured and useful persons in the countryside.

Many important questions will arise from such experience and the pupils will be led to think and use their knowledge as they answer them.

1. What plants or crops shall we grow?
2. Where and how shall we procure land?
3. How shall we procure the seeds?¹

What varieties are best?

4. Planning the garden, spacing the plants, making footpaths. (For little children it is well to make the beds narrow, with a broad footpath on either side. With a suitable footpath clearly marked, even little children will take an interest in protecting the plants and caring for them.)

5. Use of manures, planting of seeds, cultivation of the growing plants.

6. When to harvest the crops and how to use them.

7. Older pupils will find interest in keeping a notebook of expenses and income, including notes of observations with drawings.

There are several principles that may be followed in making a school garden whether it is at the school or at a pupil's home.

1. Help the pupils to feel that the garden is their

¹ Many seed merchants will supply pictures of different varieties and samples of seeds free of charge for the use of schools.

own. Cultivate an interest in it among both pupils and parents.

2. Planning should be done by the pupils themselves as far as possible. It is for them, not for the teacher, that the education and experience are essential.

3. Let the plot be small so that the work may be well done. A common error is to make the school garden too large. It should not become an undue drain on the time and energy of the teacher. Arrange the plants neatly in rows and teach the children to care for them according to the best scientific practice.

4. Be orderly. Develop habits of neatness and responsibility.

5. Learn to make careful observations and record them. Eyes that see are the sign of a growing mind.

6. Relate the subjects of the school to the garden. Writing, reading, arithmetic and drawing may be motivated in this way to a large degree. Merely to get the work done is not enough. A school garden must have cultural and educational value to the children and parents.

The work should be *completed*, and all crops, however small the amount, harvested, in an orderly manner. Cotton is sometimes produced and then allowed to drop to the ground, or to be carried away by the wind when the warm days of February and March come. Grain crops should not be grown unless they can be properly guarded. It is a poor example to grow the crop, and then allow crows and rats to destroy it. Flowers should be gathered as they mature, for use in the school or to be taken home by the children.

In normal years a school garden should always yield some income. It never needs to be a liability. The

EDUCATION AND VILLAGE IMPROVEMENT

income may be used for the school as the pupils and teachers desire, or in the case of plots at home, as the boy and his parents decide. Pupils should have a voice in the use of the produce or income, for this too is a part of education. The following is the statement of income and expense for some Standard VII pupils' fields and garden projects for the year 1937.¹ This was a poor season, but thanks to industry, good management and scientific methods on the part of both teachers and pupils, the results were quite satisfactory. While these were conducted on school land they could have been carried out at the boys' homes, had they been near.

COTTON PRODUCTION

| No. | Area (in acres) | Gross Income | EXPENSES | | | | Net Income |
|-----|-----------------------|-----------------|-------------|-------------|-------------|-------------|---------------|
| | | | Seed | Rent | Oxen | Total | |
| | | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. |
| 1. | 1/7 | 11 7 3 | 0 1 3 | 0 13 6 | 1 2 3 | 2 1 0 | 9 6 3 |
| 2. | " | 9 11 3 | 0 1 3 | 0 13 6 | 1 2 3 | 2 1 0 | 7 10 3 |
| 3. | " | 8 15 0 | 0 1 3 | 0 13 6 | 1 2 3 | 2 1 0 | 6 14 0 |
| 4. | " | 8 8 3 | 0 1 3 | 0 13 6 | 1 2 3 | 2 1 0 | 6 7 3 |

Each of the pupils had the same amount of land and in the above case it was of similar quality. The difference in income is due almost entirely to pupils' efforts. The highest net income is the reward of superior effort while the lower incomes show less care. All the work was done by the pupils themselves, so there is no charge

¹ Vocational Training School, Pupil Project Records, 1937.

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for labour, and the net income, therefore, represents the return for pupil labour and management. Land was rented at the rate of Rs. 6 per acre. This was a concession to the pupils, being about one-half the usual rate. Had the full rate been charged the expense would have been increased in each case by fourteen annas.

VEGETABLE GARDENS¹

Vegetables are essential to health. It is possible to grow them during about six months of the year without irrigation. Every home has at least a small plot that can be used for producing food in this way. By means of a school garden and by encouraging small home gardens the teacher can do much for the children. The following is a statement of income and expense for gardens of five Standard VII pupils.

| No. | Area (sq. rods) | Gross Income | EXPENSES | | | | Net Income |
|-----|-----------------------|-----------------|-------------|-------------|-----------------|-------------|---------------|
| | | | Seed | Rent | Irriga- tion | Total | |
| | | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. | Rs. as. ps. |
| 1. | 2 | 5 3 9 | 0 6 0 | 0 3 6 | 0 8 0 | 1 1 6 | 4 2 3 |
| 2. | " | 5 5 6 | 0 9 9 | 0 3 6 | 0 8 0 | 1 5 3 | 4 0 3 |
| 3. | " | 4 11 10 | 0 6 3 | 0 3 6 | 0 8 0 | 1 1 9 | 3 10 1 |
| 4. | " | 4 5 10 | 0 5 3 | 0 3 6 | 0 8 0 | 1 0 9 | 3 5 1 |
| 5. | " | 4 0 5 | 0 7 0 | 0 3 6 | 0 8 0 | 1 2 6 | 2 13 11 |

Here again the difference in income reflects a difference in degree of care and management. The rent of

¹ For a more complete discussion see Chapter VII.

land was charged at Rs. 17-8 per acre and water at As. 4 per square rod. Seed was paid for at market prices. Although the income of the gardens was very satisfactory, it is an error to look to this alone as the criterion of success for a school garden. The wholesome educational experience and outdoor exercise will be worth more to the pupils than the money income.

TREES

There is a dearth of trees in almost every village. They provide beauty throughout the year and delightful shade from the sun for both man and beast. An increased number of trees will do much to modify the climate. Due to the moisture given off through the leaves they help to make the atmosphere cooler in summer and warmer in winter. They also hold back the surplus rainfall during the monsoon, so that it remains in the soil for the use of plants after the rains have ceased. Economically trees are needed for fruit, fuel and timber. The average village could have a rich supply of fruit at a low cost if trees were planted and cared for. Mangoes, pomegranates, limes, *jambu*, *bor* and others, once planted will yield a generous supply of fruit annually without much care after the first few years.

The past generations have destroyed trees. It remains for the present generation to replace them. In many Provinces the Government will supply seeds and small trees free of charge. The planting and care of several useful trees each year may well become a part of the programme of every school. This is an experience that both teacher and pupil will enjoy. Children love growing things and every boy should have the

experience of planting a tree and caring for it. One evening early in the monsoon may be devoted each year to the planting of trees. In most countries this is regarded as a patriotic service.

A note on planting and caring for Trees

An experienced gardener will tell us which trees may be grown from seed and for which grafts are necessary. In planting a small tree the first step is to dig a hole six inches deeper and twelve inches wider than is necessary to accommodate the roots. Unless the soil is naturally fertile we should bring in some rich soil for filling the lower half of the hole. Dig up the seedling and move it carefully so as to save all the roots with the soil on them. Press fine soil lightly about the roots with the hands. When the hole is three-fourths filled with soil, gently pour in a bucketful of water. When this has disappeared add the remaining soil. Use manure on top of the ground, not in the hole with the roots. During the monsoon, water is not likely to be needed, but the soil round the tree should be cultivated. After the monsoon, the tree should have two bucketfuls of water on every tenth day and the soil must be cultivated two days after giving the water. Build a fence of thorns round the young tree.

FLOWERS

A conspicuous feature of village life is the lack of flowers. In a recent visit we found only one flowering plant in a village of over 2,000 people, and that was beside a Muslim tomb. During the monsoon a teacher and his pupils can add much to the beauty of the village by growing flowers. It is good to have flowers

growing in the school garden. It is still better if the pupils plant some at their homes.

Agriculture and gardening taught well in the schools will do much to help the people and add to the joy and beauty of village life. The inexperienced may say: 'We know how to farm'. As a matter of fact we know very little about agriculture; almost nothing, if we regard the amount to be learned. The habits of plants and animals with their nutrition and care will suggest a simple beginning. From there the teacher and his class may go as deep into the chemical and physical wonders of the soil, plant and animal life as they are able.

One of the most essential steps in rural progress is adequate instruction in agriculture in all village schools. It is a mistake to think that agriculture is only a 'bread-and-butter' subject. For that it is useful, but it offers more. *Agriculture is a manner of life. It helps young people to see the possibility for improvement and beauty, and to choose rural life at its best as their heritage.*

SECOND YEAR: *Village Birds and Animals*

Village birds and animals are next in importance to plant life. The best way to begin their improvement is by rousing the interest and imagination of school children. The interest in plant production can easily be extended to the study of animal life, for children will readily see the relationship between the two.

A survey count of the animals of the village is always interesting and instructive. Pupils may work in groups. The following outline is suggested, although the teacher and pupils will probably prefer to prepare their own.

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1. Animals used for doing work.
2. Animals that supply food.
3. Fowls.
4. Birds: (*a*) useful; (*b*) harmful.

Some Questions for Study

1. From where do farmers procure their oxen?

What different breeds of cattle are found in the village?

Learn how to recognize a good bullock.

What is being done to improve the bullocks of the community? What more could be done?

2. Why do some cows and buffaloes give more milk than others?

How much milk should a good cow produce daily? A buffalo? Get records from the Agricultural Overseer.

How might the cows and buffaloes of the village be improved?

What would be the result if, through careful selection, fewer and better animals were kept?

Goats are often called 'the poor man's cow'. Why? How might they become more useful?

3. Make a survey of the fowls in the village.

How many are pure-bred or improved?

How many are ordinary *desi* (unimproved)?

What are the points of difference between pure-bred fowls and *desi* fowls?

How might all the fowls of the village be improved?

How much time would be required?

What would be the approximate cost?

There are over seventy different breeds of

pure-bred fowls in the world. Why should the Indian cultivator go on keeping 'jungle' fowls?

Procure information from your nearest Agricultural Officer or Uplift Committee and encourage some of the children to raise pure-bred fowls.

4. Birds are valuable because of their beauty and because they destroy harmful insects. Often the average schoolboy can recognize only the crow, the parrot, the kite, and the sparrow. Alert teachers are informed about the more interesting and beautiful birds and they can share much information and experience with the children. The older boys should learn to recognize as many birds as they can. For example: (i) the cuckoo (ii) the kingfisher (iii) the Indian blue jay (iv) the woodpecker (v) the weaver bird (vi) the Indian robin (vii) the mina (viii) the hoopoe (ix) the bulbul.

Learn to recognize each from its appearance and song, also learn what you can about the feeding, mating and nesting habits of each. We have seen dull school-rooms become places of interest and mental activity after the children began to bring in accounts of what they saw at home or on their way to and from school. Such accounts when written may become an aid to teaching writing and composition.

THIRD YEAR: *Village Homes*

By home we mean not only the house but also the people and the useful things that are needed to make a good home. Children can readily see the relationship between good animals and plants and a joyful and beautiful home life. A good home need not be an expensive one. Simple peasant homes, where all have learned something of the art of living, may be the most

beautiful. Some teachers like to begin first with the home in their study of village life.

In a complete home there are many different relationships; husband-wife, father-mother, brother-sister, son-daughter. Rich or poor, a home is happy only when the various members respect, love and honour each other. For teaching suggestions, reference may be made to Chapter XI.

MAKING USEFUL THINGS

Handcrafts may also be taught in relation to the home. During adolescence there is perhaps no experience so meaningful to a lad as the thrill of pride that comes to him when he has completed something of use and beauty with his own hands. The goal in teaching handwork, whether for girls or for boys, should be high quality and utility in the home. We miss the real purpose of handcraft in the curriculum if we confine the work to making fancy models for show, to keep for exhibition when guests come.

Of all crafts for boys, woodcraft is considered the best from the standpoint of educational value. It provides clean, healthful experience and gives wide scope for developing character, skill and originality. With a few simple tools, an enterprising teacher and the boys of the upper primary standards can make many useful things.¹

The following is a list of articles suitable for boys in Standards V, VI, and VII:—

1. Wooden toys and kites.
2. Bread boards.
3. Yoke pins.
4. Stools.

¹ See I. W. Moomaw, *Woodcraft for Indian Schools* (Gujarati).

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5. Picture frames.

6. Wooden boxes.

The following is a list¹ of essential tools for a class of eight boys:—

| | | | Rs. | as. | ps. |
|-------------------------------------|----|----|-----|-----|-----|
| 2 hammers @ Re. 1-8 each | .. | .. | 3 | 0 | 0 |
| 4 chisels @ as. 12 each | .. | .. | 3 | 0 | 0 |
| 4 planes @ Re. 1 each | .. | .. | 4 | 0 | 0 |
| 1 hand saw 22" | .. | .. | 1 | 12 | 0 |
| 2 coping or fret saws @ as. 12 each | .. | .. | 1 | 8 | 0 |
| 1 screw-driver | .. | .. | 0 | 8 | 0 |
| 2 adze @ Re. 1-8 each | .. | .. | 3 | 0 | 0 |
| 4 try-squares @ as. 10 each | .. | .. | 2 | 8 | 0 |
| 1 brace for drills | .. | .. | 2 | 0 | 0 |
| 4 wood drills, assorted | .. | .. | 1 | 0 | 0 |
| Total Rs. | | | 22 | 4 | 0 |

When parents learn of the useful experience their boys are acquiring, they will gladly furnish the materials needed. The only expense to the school is for tools, and these can often be had as a gift through the kindness of some patron.

FOURTH YEAR : *Village Health and Recreation*²

It is said that rural India does not play, and that those who find the dullness of rural life intolerable drift to the cities, where they purchase recreation ready-made. There should be a playground in every school, where both young and old can come regularly for games and recreation. Good books in Indian languages are now cheap, and it is generally possible to secure these as gifts for a library. In general, the library should

be in the school, and older pupils can gain valuable experience and render useful service in serving by turns as librarian.

FIFTH YEAR : *Our Neighbours and How They Live*

This is a study of the people and occupations of the village. If the pupils have been prepared, a trip to visit the various shopkeepers, the postman and the different craftsmen, is always interesting and helpful. The shopkeeper can describe the articles he has to sell, where they come from and how he procures them. The postman can give an account of his work that will be of much value. He can explain from where the letters and packages come, and to where they are sent. The different kinds of stamps, rates of postage, money orders, telegrams and forms may thus become a part of the education of every pupil. In larger towns the telephone and telegraph can also be seen and studied. These are instruments of wonder for the average boy, and a trip to study them and their use is well worth while. Most children only know cotton ginning mills and oil mills from the outside, while when seen from within they contain wonders for any child.

In taking trips to visit places and people there should be a definite purpose and the pupils should understand why they are going before they leave the school. After a visit, there should be a time for discussion and answering questions, after which the older pupils should make notes on what they have seen and learned.

The daily or weekly newspaper may also be of much help. One should come to every school for use in upper standards. Children's books and magazines should be used because of the current information they give.

Through them the children may develop the necessary transfer of interest from the textbooks to out-of-school literature. Education should help children to develop the reading habit and instil in them an interest in the various peoples of the world.

It will sometimes be possible for the teacher and the community to have an exhibition at the school. Such an exhibition need not be a great or expensive show. From the school the children will have maps, posters and produce from the garden. Parents will bring samples of their best crops, including grain, vegetables, fruits and flowers. Pets, fowls and other animals may be included. The village craftsman may bring some of his work. In several villages such exhibitions are conducted annually. The teacher of course gives guidance and help, but the parents and older boys take most of the responsibility. It is always possible to procure an outside speaker who will also serve as judge of the exhibits. The teacher and his class can provide some entertainment with suitable dramas.¹

SOME REWARDS FROM TEACHING BY ROTATION

1. Pupil interest, so essential to education will increase. The average schoolroom tends to become a dull place, but the Rotation Plan provides variety from month to month. Having finished the five divisions as suggested above, the teacher may begin over again, but there will be need for necessary revision and additions each time.

¹ For suggested dramas see F. L. Brayne, *Socrates in an Indian Village* and Emily G. Hatch, *Little Plays*.

2. Attendance will increase and become more regular; for both pupils and their parents will be interested in the work of the school and see more clearly its value to them.

3. Teachers will become more useful from year to year. To get better pupils there must be better teachers.

4. The children will develop not only while in school but they will form habits that will encourage continued growth after leaving school. It is distressing to see the great numbers who slip back into illiteracy, largely because they had memorized facts while in school, without relating their class life to out-of-school life. The carpenter would be alarmed if his tables should fall to pieces after a few years. The artist would at once seek a remedy if he saw his colours fading. In village education many of our efforts are in vain because there is so little intimate relationship with out-of-school life. *Knowledge must be used if it is to be remembered.*

5. There will be village improvement. This is what we should expect from every school. There can be no quick nor radical change, but the school can become a channel through which new life may flow.

CHAPTER IV

EDUCATION AND RURAL HEALTH

IMPROVED health is one of the great gifts that education offers to village India. Health instruction properly given will extend beyond the classroom. It will improve health and help to prevent disease. Much depends on the teacher's aim. Pupils may be able to recite the rules of hygiene, pass an examination well, and still not put into practice the knowledge they have received. This chapter is a record of experience in carrying health instruction beyond the threshold of the school, so as to help the children and their parents at home. Health improvement is usually the most fruitful place to begin rural service. Parents desire health for themselves and their children. Often they suffer needlessly and take long, costly journeys to get help for ills that might have been prevented through suitable instruction in hygiene. The effective teacher regards health education as a means for improving the health of pupils and parents. Preparation of pupils for an examination is a secondary aim to him. Experience has shown that teachers who keep the improvement of health as their chief goal usually find their pupils are well prepared at examination time.

The village at its best is a healthful place in which to live, yet the amount of illness that village people suffer is pathetic. The progress of many children is retarded in school because of ill health. Attendance records tell

a story of much absence that might have been prevented. Some who are present regularly cannot learn well because of ailments such as fever, irritated skin, sore eyes or poor hearing. Merely to see or hear is not sufficient. The real question for the teacher is how well a pupil can see or hear.

During a recent visit to a village we called at eighteen homes. In five of the homes one or more members of the family were ill. Out of a population of 250, seventeen were ill and unable to carry on their usual activities. Five children out of a register number of twenty-four were absent from school because of illness, most of which was preventable. The school register showed such absence to be a normal occurrence. The teacher was distressed, but he felt there was very little that he could do. He had observed that fever, skin diseases, sore eyes, dysentery and colds were the most common forms of illness among the pupils. It is hoped that with instruction and the co-operation of parents most of these ills can be controlled to a large extent.

Sickness is one of the oldest problems of mankind. More than 2,000 years ago the Babylonian king, Hammurabi, studied the health problems of his subjects and tried various ways for solving them. A few of the same ills are still with us, although we have learned much about the causes and treatment of disease, especially during the past half century. Primitive men frequently attributed ill health or disease to the wrath of God. This was especially true of epidemics. Many today still attribute sickness to evil spirits, the influence of an enemy, the 'evil eye', fate, and unfavourable planets. Others regard illness as just hard luck, which comes and has to be endured.

Among the untaught the term 'fever' covers much. Its various forms are described as 'hot fever', 'cold fever', 'low fever' and 'recurring fever'. In any effort toward the improvement of health the first point to stress is the fact that illness usually has a natural cause. It is no longer a dark mystery to be feared. The time to treat many common ills is before they begin.

I. THE VILLAGE WATER SUPPLY

Pure water is healthful, but when polluted it becomes a carrier of disease. At normal temperature some germs and parasites live and multiply in water. Dysentery, enteric fever, cholera and intestinal parasites are commonly spread by the water we drink.

Many are not aware of the need for pure water. Those who are careful to bathe daily and wear clean clothes will often drink water from dirty wells and tanks. Wells are seldom, if ever, cleaned, whereas those not used for irrigation should be cleaned annually. When uplift work was started in a certain village, no one could remember that the well had ever been cleaned. So it was decided to clean out the well as a first step. To the astonishment of all, filth to a depth of three feet was found. There were old shoes, pieces of rotting garments, and both human and animal bones.

A trip to the village well may be instructive and helpful to the pupils, even though they may see it daily. It is desirable to have several interested men and women present. With their help and counsel the teacher and pupils will consider points like the following:

1. The location of the well. Does dirty water flow toward or away from it?
2. Is it in an open place where the sunshine has

free access, or is it shaded by trees whose falling leaves decay in the water?

3. When was the well last cleaned?

4. Does water from bathing or washing of clothes flow back into it?

5. Are the upper ten feet of the well closed tightly with masonry so as to prevent the inflow of germ-laden water?

6. What would be the advantages if all used a common vessel, kept at the well, for drawing water?

A similar trip to the village tank should be planned. In what ways does tank water become polluted? A poster contest among the children of the upper standards always proves interesting and helpful. Let them see who can draw the best picture to illustrate the need for pure water. In almost every village we may find some public-spirited person willing to supply materials needed for such drawing and hand-work, when it is not available from school funds. Contrary to much popular opinion, village people desire improvement when they see its worth to them. There is usually a way to provide the cost of any worthy effort.

How to Purify Drinking-water

There are several methods for purifying water in a well during epidemics of dysentery and cholera.

1. *Potassium permanganate*. This is a dark purple, granular substance that can be procured from any dispensary for a few annas per ounce. Three ounces are required for a large well and one-and-a-half ounces for a small one. Mix the potassium permanganate with a bucketful of water, and then pour the liquid into the well. Stir the water by moving the filled bucket up

and down for a few minutes. The water will become rose-coloured, but there is no objection to using it at once.

2. *Chlorination*. Liquid chlorogen, obtainable from a dispensary, may also be used to purify water. For a large well three ounces are needed, and for a small well one-and-a-half ounces are sufficient. Mix the quantity needed in a bucketful of water and pour into the well. The water may be used at once. Chlorinating agents deteriorate with age and exposure to light, so it is essential to purchase fresh material, otherwise it may be ineffective.

Water should be purified as above every four days during an epidemic.

3. *Boiling*. For individual families the safest method for purifying water is boiling. Boiling is costly and troublesome, but in times of epidemics of cholera, dysentery or typhoid fever, all who can should boil their drinking water as an added precaution. The water should actually boil for about five minutes, after which it may be placed in a clean vessel to cool.

2. VILLAGE CLEANLINESS

Closely related to health is village cleanliness. It is good to have a village 'clean-up', when the people themselves or the boy scouts all turn out and clean the entire place in a day. However, the interest thus aroused is often only temporary, and a stranger visiting the village several months later would perhaps not know that it had been cleaned. The teacher, who through his example and encouragement can interest the people in *keeping the village clean permanently*, renders a less dramatic, but far more useful service.

Manure and rubbish pits are needed for every home. The pit in which manure is kept should be at some distance from the house. A smaller pit into which pieces of rag, paper and sweepings are thrown may be quite near. To receive manure from a yoke of oxen and two cows the pit should be about 8' long, 6' wide and 3' deep. For waste from the house a pit 3' square and 2' deep will be sufficient. Into such pits every bit of dirt and manure should be thrown. Mr F. L. Brayne has shown that manure and dirt lying about, apart from being offensive, are injurious to health. Flies and rats multiply, and on dry, windy days the germ-laden dust is blown about. It is inhaled into the lungs, and eaten with the food. When thrown into pits all waste becomes wealth in the form of manure after one year. A cart-load of good manure applied to the soil is worth at least Rs. 6.¹ In this way Nature rewards us for keeping the village clean. The use of pits for manure and waste is the sign of a thrifty home. As soon as a pit is filled another should be ready nearby. The filled one may then be covered until the contents have well decayed. It may then be emptied and used again. There is perhaps nothing that will contribute so much to village health, cleanliness and prosperity as the use of manure and waste pits. The village teacher can often do more than anyone else to develop a permanent interest in this form of sanitation and improvement. To quicken the energy and imagination of children is the surest way to village sanitation.

Sanitary Latrines. Another essential to village hygiene is the sanitary latrine. Every home should have

¹ Vocational Training School, Farm Projects Records, 1928-37.

one, and at school there should be one for the boys and another for the girls. Lack of suitable latrines is 'one of the chief ways by which disease is spread from one person to another. Enteric fever is often spread in this way — also cholera, dysentery and other bowel complaints. Hookworm, so widely prevalent, is largely due to soil pollution.'¹ When lanes and hedges are polluted the filth and germs are readily carried by the feet. They are also spread by wind and flies. The common latrine having open pans to be emptied by the sweeper in some open place, is little or no improvement. Judging by the odour, appearance and its tendency to spread disease it is probably worse than having none whatever.

For general use in rural areas the bore-hole latrine is recommended. It is sanitary, æsthetic, inexpensive, and easy to construct. It consists of a pit about 16" in diameter and 10' to 14' deep, a stone slab for placing across the pit and some simple protection for privacy. The pit may be made with an earth auger, a tool especially prepared for the purpose. If an auger is not available, ordinary digging tools may be used, and in this case the pit should be 1' 4" wide, 3' long and 10' deep. It should be situated on high ground to prevent it becoming flooded during the monsoon, and seventy-five feet or more from any well. In this case there will be no danger of the water being polluted.

A hole 16" in diameter and 14' deep will last a family for about two years. A rectangular pit 1' 4" × 3' and 10' deep will last twenty people for at least one year. There is no offensive odour from the pit as the soil bacteria convert the night-soil into a humus-like powder soon after

¹ Leaflet on Bore-hole Latrines, Department of Public Health, Madras.

it enters. Flies do not enter as it is dark on the inside. When a pit has become filled to within two feet from the top some earth should be thrown in to cover it and a new pit prepared nearby. After about one year the night-soil in the first pit will be converted into an odourless, black powder resembling rich soil or humus. This is free from germs and is in no way offensive to handle. It may be removed and used as manure, in which case it is worth at least Rs. 16 per cartload. The bore-hole latrine is hygienic since it prevents the spread of infectious disease and keeps the village clean. It is economical to use, for the initial cost is low, and after the second year the night-soil has a definite value.

A concrete slab or two planks must be placed across the pit as soon as it is dug. A stone cover may also be used, but a slab of reinforced concrete is superior to either stone or planks. The reinforced concrete slab should be $2\frac{1}{2}$ " thick and of sufficient length and width to extend for at least one foot beyond the pit on all sides. Where there is any tendency for the earth to slip, the slab should rest on two iron bars or hard wood poles placed on either side of the pit.

Materials

The reinforced concrete slab is prepared as follows:

1. $\frac{1}{4}$ " Iron rods for reinforcing. (Sufficient in number to be placed 6 inches apart, both lengthwise and cross-wise in the form.)
2. Form. (May be prepared by placing bricks or pieces of $1" \times 2\frac{1}{2}"$ wood on the level ground, according to the desired measurements.)
3. Concrete. (This is prepared by mixing three parts gravel, two parts sand and one part cement.)

Mix the dry gravel, sand and cement. Add the necessary amount of water, stirring continually with a hoe or shovel. When the concrete has been well mixed, place the iron rods in position. While placing the rods a form for the centre hole may be made by bending a strip of sheet metal to the desired shape. The concrete may then be placed and smoothed with a block of wood. Reinforced concrete requires at least six days in order to harden. During this time it must be kept wet and covered, otherwise it will merely dry instead of hardening, and be ruined.

The cost¹ of construction for a bore-hole latrine is estimated as follows:

Excavation of pit, if labour is employed, Rs. 2-8.

Reinforced concrete slab, iron rods and cement, Rs. 3.

Bamboo mats or house for protection, Re. 1 to Rs. 8.

Bore-hole latrines are being used widely in the Phillippine Islands where they have been helpful in freeing the people from hookworm. They are steadily being introduced in India, especially in the Punjab and the Madras Presidency. They are beginning to be used in the Bombay Presidency.

3. THE TEACHER AND VILLAGE HEALTH

So far we have considered the two essential phases of village health; (1) pure water, and (2) village cleanliness. Let us now turn to some specific ills that may be lessened through health instruction.

Village people, especially those in poorer wards, have little or no access to medical aid. It is natural that they should turn to the teacher in time of distress. Though not a doctor himself, there is much that he can

¹ See general note on prices today.

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do in the way of simple first-aid and relief. Such service is helpful in several ways. It is the means of relieving much physical suffering, it develops among the people a feeling of respect and appreciation toward their teacher, and quickens their interest in removing some of their own disabilities. It is the highest type of health education.

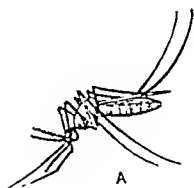
MALARIA

Malaria has been called 'less of a killer than a sapper'. For this reason it is more destructive. Should a visible enemy stalk through the land, slaying great numbers, people would arise, and jointly slay him. Malaria subtly saps the life and energy from millions without opposition from them.

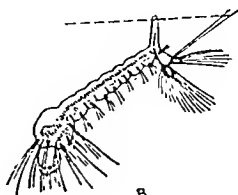
Perhaps the first step in the control of malaria is to make children in school aware of its cause. The name malaria means 'bad air'. People first observed that those living in low, damp places suffered most from this fever. They thought that the fever was caused by the moist air of the lowlands, so they called it malaria, 'bad-air' fever. It was a great step forward when the real cause of malaria was found.

Malaria fever is caused by germs which enter the blood when a certain kind of mosquito, called the anopheles, bites us. This mosquito is identified by the black spots on its wings. It makes no noise when it flies, and when it rests it leans forward on its proboscis, as if it were almost standing on its head. When the anopheles mosquito bites one who has malaria it draws some germ-laden blood into its own body. It then becomes a 'carrier', and the germs are spread to healthy people when the mosquito bites them.

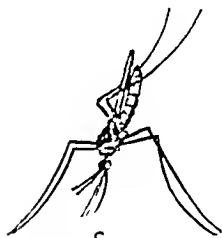
Malaria mosquitoes do not travel far. When the wind blows they usually cling to trees and shrubs, or enter houses. People who suffer from malaria will usually find mosquitoes breeding nearby. Often they will be



A



B



C



D

A. Common mosquito.

B. Common mosquito larvæ.

C. Malaria mosquito.

D. Malaria mosquito larvæ.

found within their own house or garden. Mosquitoes breed in still water and in dark damp places. Many may develop in an old bucket or tin containing water. It is an interesting experience for children to recognize malarious mosquitoes and find their breeding-places. On clear days we can see the adult mosquitoes emerge from the water ready to begin the spread of malaria.

Mosquitoes may be destroyed in the larval stage by pouring a little oil on the water in which they live. For

this purpose, kerosene, crude oil or waste motor car oil may be used. Only a small quantity is needed. It spreads out over the water in a thin film which destroys the larvæ when they come to the surface. All pupils should have experience in recognizing and destroying mosquitoes. Only in this way can they become intelligently aware of the malaria problem and be prepared to take part in controlling it as opportunities arise.

More important than the destruction of mosquitoes is the destruction of their breeding-places. Water courses from the kitchen or bathroom should be kept open and clean. Waste water should be drained away from the house and used for trees and plants. During the monsoon, old buckets or water vessels should not lie about the premises, for they collect water in which mosquitoes may breed. Those in charge of road repairs should refrain from digging pits alongside the roads when removing earth, as these become ideal breeding-places during the rains and prove costly to the health of the people. Teach the children, and through them their parents, to recognize breeding-places, and remove them when possible. During the 'fever season' it is well to spend a few minutes of school time each day for hearing reports from pupils who have had experience in mosquito control.

The use of mosquito nets should be encouraged. They are now inexpensive, and with care a net will last for several years.¹

Having considered the cause of malaria and methods of prevention the next step is a cure for those who become infected. A sufferer from malaria may take one

¹ Department of Cottage Industries, Lahore, Punjab.

of two courses. He may endure it and will probably survive, weakened and emaciated after days of suffering; or he may check it by taking quinine immediately he feels the first effects of fever. Quinine cures malaria by killing the germs in the blood. Children and their parents should know the nearest place to get quinine. Consult a doctor or health officer about the methods for using it. If possible, compare the duration of fever and the bodily effects when quinine is used and when it is not used.

Some people hesitate to pay the cost of quinine. They seem to forget that the cost of days lost and the extra food needed to bring one ill person back to health may be more than the cost of quinine for the entire family. In using quinine remember the old proverb, 'prevention is better than cure'.

To make the people aware of the cause of malaria and how it may to a large extent be prevented is a priceless service that the school teacher can render. No teacher will have time to go from house to house with his class destroying the breeding-places of mosquitoes. One or two trips occasionally to teach the children and awaken interest among parents will be sufficient. The teacher's chief service is to create a desire to prevent malaria. With the people themselves alert to this need, the service of health officers will become more effective and the people can do much to help themselves.

SKIN DISEASES

It is comparatively easy to prevent skin diseases, but it is difficult to effect a cure. Itch is a disease that may be found almost continually in the average village

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school. It hinders the pupils' progress and becomes a great worry to the teacher. It is caused by very minute insects (*Acarus scabiei*) that bore through the skin and form sores. Those who neglect to bathe are usually the first to suffer from itch. The little insects seem to prefer the tender skin between the fingers, and here the first sores are usually found. If not prevented, the itch-forming organisms breed and move to other parts of the body.

Children may have the best literature about hygiene and the teacher may do his work faithfully, but unless they apply their knowledge to daily use, their efforts are in vain. There is little or no value in merely memorizing the rules of hygiene.

To encourage habits of hygiene among pupils the following chart has been used with success.

OUR HEALTH CHART

CLASS.....

| | September | | | | |
|-----------------------------|-----------|---|---|---|---------|
| | 1 | 2 | 3 | 4 | etc. 30 |
| Name _____ | | | | | |
| I have bathed ... | × | × | | | |
| I have combed my hair ... | ○ | ○ | | | |
| I have cleaned my teeth ... | × | × | | | |
| Name _____ | | | | | |
| I have bathed ... | × | × | | | |
| I have combed my hair ... | × | × | | | |
| I have cleaned my teeth ... | × | × | | | |
| Name _____ | | | | | |
| I have bathed ... | ○ | × | | | |
| I have combed my hair ... | × | × | | | |
| I have cleaned my teeth ... | × | ○ | | | |

A large paper or blackboard is used for the chart, providing a space for each pupil in the class, as shown above. At a fixed time daily each child is allowed to mark an \times in the space opposite his name if he has done these simple duties which contribute so much to his personal health. If he has not done so, an O is placed in the spaces instead of the \times . Teachers who have used the charts diligently notice a remarkable improvement in the health habits of the class within a comparatively short time. The chart becomes an object lesson in hygiene, and each takes a greater interest in his personal habits.

Another encouragement to class hygiene is the making of soap. This is an ideal object lesson. The materials are simple and inexpensive and children enjoy this kind of activity. Knowledge acquired through such experience is most useful to them.

HOW TO MAKE SOAP

Soap is a mixture of oil, water and an alkali—usually caustic soda. There are three chief kinds of soap that can be made in the school or home; (i) Coconut oil soap, (ii) Doliu oil¹ soap and (iii) Mixed oils soap. All of these are satisfactory and the teacher may select the kind of oil that is cheapest and easiest to obtain. The only equipment needed will be two iron or enamelled basins for mixing the materials, and a clean piece of wood for stirring. (Aluminium vessels cannot be used as the alkali dissolves aluminium.) The oil and caustic soda can usually be purchased in any bazaar.

¹ This is an oil made from the fruit of the *mahu* tree (*Barringtonia latifolia*).

Coconut oil soap

- 3 parts by weight of water
- 5 parts by weight of coconut oil
- 1 part by weight of caustic soda

Put the water into a basin and add the caustic soda. The water will become hot. Stir slowly until all the caustic soda is dissolved, then allow it to cool for about fifteen minutes. Caustic soda by itself or dissolved in water is very injurious to the skin, so it must be handled with great care. When the solution has cooled it should be poured *slowly* into the oil, stirring all the time. In cold weather the oil may be warmed a little. Keep on stirring until the mixture becomes rather thick, like honey. It should then be poured into a basin or a flat pan to set. After twenty-four hours the soap can be cut into squares with a knife. Coconut oil gives a pure white soap. In some respects it is superior to soap made from other oils because it lathers freely and 'wears' well.

Doliu oil soap

- 5 parts by weight of doliu oil
- 4 parts by weight of water
- $\frac{1}{2}$ part by weight of caustic soda
- $\frac{1}{2}$ part by weight of washing soda

Mix the alkali and water as in the above recipe and add the oil slowly, stirring until it thickens. When doliu oil is available soap made from it is cheaper than other kinds. It does not 'wear' as well as other soaps.

Mixed oil soap

- 1 part by weight of castor oil
- 2 parts by weight of coconut oil
- $3\frac{1}{2}$ parts by weight of doliu oil

3 parts by weight of water

1 part by weight of caustic soda

Mix the three oils in one basin and the caustic soda and water in another, as for the coconut oil soap. This time, however, *the oil must be poured into the caustic soda solution* after it has cooled, stirring all the time. This produces a soap of yellow colour. It does not dry out easily and wears well.

Some notes on Soap-making

1. All ingredients—oil, caustic soda and water—should be weighed accurately.
2. Use only iron, enamel or glass vessels, never aluminium.
3. In cold weather the oil should be warmed.
4. Before giving a class or village demonstration, the teacher should first make several trial lots of soap to acquire the necessary experience.

As soap-making is a demonstration useful and interesting to all, the teacher should plan it at a time when both parents and children can be present. Soaps made as set forth here are of superior quality and should not be compared with the many inferior grades of soap offered for sale in the markets.

After the skin has been well bathed with soap we must apply medicine to destroy the itch-forming organisms, otherwise they will emerge from the sores and spread over the clean skin. Sulphur is the best known remedy for itch. It can be purchased in nearly all villages at a few annas per pound. A very satisfactory method of using sulphur is to mix it with sweet oil or coconut oil so as to form an ointment. This is rubbed well into the sores each day. It destroys the organisms

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and helps to heal. Once the sores are bathed properly and the ointment applied, it should not be washed off, but a fresh application made daily until the itch is cured.

It is well to prepare the itch ointment as a class exercise. Small amounts should be prepared as needed because the oil tends to become rancid during warm weather.

Requirements for making sulphur ointment. $\frac{1}{4}$ lb. sulphur, $\frac{1}{4}$ lb. sweet oil, a spatula for mixing, and a cup or tin.

COLDS

In winter, colds are common among school children. In a survey of eight schools during December, almost half the children were suffering from head colds. Whatever the cause of colds or nasal infection may be, the dust- and germ-laden air during the cold winter nights does much to aggravate the condition. Many children are thus kept in distress throughout the winter months. Being far from a dispensary or unable to pay for medicines, many people suffer from one cold after another until the warmth of April brings relief. For a cold, ointment is not a cure but it brings some protection and relief, and the children like it. Those who have no access to ointment prepared by a qualified doctor can make a simple ointment at home. When the teacher uses the preparation of ointment as a class activity the children may bring a pice each to contribute toward the cost and they can share the ointment equally.

*The Ointment*¹

| | | |
|-------------------------|----|---------------|
| 1 lb. vaseline | .. | (about) as. 5 |
| 1 oz. oil of eucalyptus | .. | „ as. 2 |

¹ See general note on prices today.

The vaseline and oil of eucalyptus are mixed well and placed in a closed container for use. Other ingredients, such as oil of menthol or camphor, may be added if desired, but for a home remedy the above will be found helpful. Even vaseline itself is a soothing protection for irritated membranes.

SORE EYES

The eyes of children often become sore and irritated. They water profusely and tend to become pasted, shut by a greyish white substance. The disease is contagious, and once it starts in a school it may spread from one to another, annoying both children and teachers for several months.

A simple and inexpensive remedy for sore eyes is boric acid solution. Purchase two annas worth of boric acid from a chemist or doctor and keep it handy in a clean jar for use as required. To prepare the solution put a little *boiled water* into a small *clean* bottle. Add as much boric acid powder as will dissolve. As boric acid powder dissolves slowly, it will be necessary to shake the bottle for several minutes.

To apply the medicine lay the child on a mat, hold each eye open in turn and pour in a few drops. If there is much infection the eye may be bathed with cotton wool saturated with the boric acid solution. This may be done twice daily until the eyes are cured. Children and parents should be taught not to touch the sore eyes except with a bit of *clean* cloth or cotton wool which can be destroyed after use. If possible, a medicine-dropper should be kept handy for applying boric acid lotion to the eyes. These can be purchased from any chemist's shop or dispensary for a few annas each.

WOUNDS AND ULCERS

A common practice among those who have no medical aid is to leave a wound alone, hoping it will heal without treatment. Others may apply sweet oil or some other home remedy. These are often helpful if no infection is present. Of this we can never be sure. The first step to healing a wound or an ulcer is cleanliness. A clean wound usually heals rapidly. To clean a sore, a strong solution of boiled water and epsom salt is effective. Epsom salt can be purchased from a chemist for about four annas an ounce. Use a large spoonful to a cup of boiling water. Clean the wound well with the solution, using clean cloth or cotton wool. Place over it a cotton pad saturated with the hot solution, then bind it with a clean cloth. This will keep the wound clean and help it to heal. The cotton pad should be replaced once or twice daily. In the absence of epsom salt even common salt will be found helpful.

A small fresh cut can be treated with tincture iodine. Whatever disinfectant is used, it should be applied immediately an injury takes place. Once infection has begun, healing is a slow and difficult process.

This chapter is not intended to be a complete treatise on first-aid. Nor is it assumed that the teacher will perform the services of a doctor. The above simple remedies have been indicated here as a means of giving help to those who have no access to medical aid and because of their educational value in the school and community. The chief aim of the teacher will be to interest people in health and the prevention of disease. Experience has shown that one of the best ways of creating this interest is to help the people provide some simple forms of first-

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aid for themselves. If possible it is well to invite a qualified doctor to give a lecture to the pupils and their parents at least once a year.

The teacher in a remote village will need a medicine kit both for the protection of his family and to help the people. Many teachers in this way are providing some simple medicines for the people at small cost.

SUGGESTED LIST¹ OF MINIMUM SUPPLIES FOR A SCHOOL MEDICINE KIT

| | | | | | | Rs. as. ps. |
|---|----|----|----|----|---|-------------|
| $\frac{1}{2}$ lb. sulphur | .. | .. | .. | .. | 0 | 3 0 |
| 1 lb. vaseline | .. | .. | .. | .. | 0 | 5 0 |
| 2 oz. eucalyptus oil | .. | .. | .. | .. | 0 | 4 0 |
| quinine or cinchona | .. | .. | .. | .. | 1 | 8 0 |
| 2 lb. epsom salt | .. | .. | .. | .. | 0 | 4 0 |
| 2 oz. boric acid powder | .. | .. | .. | .. | 0 | 2 0 |
| 2 oz. tincture iodine | .. | .. | .. | .. | 0 | 8 0 |
| $\frac{1}{4}$ lb. cotton wool | .. | .. | .. | .. | 0 | 6 0 |
| carbolic acid soap | .. | .. | .. | .. | 0 | 2 0 |
| 2 oz. potassium permanganate crystals | .. | .. | .. | .. | 0 | 4 0 |
| clinical thermometer | .. | .. | .. | .. | 1 | 4 0 |
| worn white cloth, washed and boiled, for bandages | - | - | - | - | - | - - - |
| used safety razor blades | .. | .. | .. | .. | - | - - - |
| Total Rs. | | | | | 5 | 2 0 |

¹ See general note on prices today.

CHAPTER V RURAL INDEBTEDNESS

AN important factor in village improvement is indebtedness. Its heavy yoke checks enterprise and surrounds the people with despair. Many have mortgaged their land, so that it is no longer their own to farm and improve as they choose. Facing the loss of their ancestral fields they are not in a mood to contemplate village uplift with enthusiasm. It comes too late to help them. It is only a word, lacking meaning. Their spirit of enterprise in education and village hygiene is dulled by the depression that comes over a people when they are hopelessly in debt.

One reliable estimate places rural India's total indebtedness at nine hundred crores of rupees.¹ In a recent survey of one village the average indebtedness per family of cultivators was found to be Rs. 291.² Studies among the backward classes of ten villages revealed that four-fifths of the families are indebted by amounts varying from Rs. 25 to over Rs. 400. Of a group of forty families it was said that all but one were in debt. We called at the home of this man, but learned that he too had taken a small loan just a few days before. A leading District Land Bank has advanced 312 loans for the payment of old debts but only one for the purchase of land.

¹ DeMello, *Problems of Rural Reconstruction*, p. 25.
² Vocational Training School Survey No. 3.

In contemplating village improvement we should note the fact that the average villager is struggling to serve two masters, one his obligation to his creditor, and the other his obligation to his home and society. Of the two, his creditor usually takes first place.

The intimate relation between indebtedness and village improvement makes it essential that we inquire into the nature of debts and some of the reasons for their occurrence. In the first place they are either productive or non-productive according to the use made of the money that was borrowed. Money borrowed to purchase cattle, houses, sewing machines, land, seeds or farm tools, to pay for education or to settle old debts, is considered a productive debt since it usually strengthens the farmer's economic position.

Money spent for weddings, jewellery and ceremonies which yield no income causes debts that are non-productive. The interest rate is usually higher for money thus loaned, as the risk to the lender is much greater than in the case of loans for productive purposes. Such debts are by far the most difficult to repay as the debtor assumes the added burden of a high rate of interest without having done anything to strengthen his position economically.

In farming, the line between personal household expense and productive expense incurred in conducting the farm is often not clearly drawn. A man may take an advance for cultivation expenses, but as accounts are rarely kept it is a common practice for much of the money to be used in paying household bills. Many of the loans listed in Co-operative Society books as productive are really non-productive.

There are long-term and short-term debts, according

to the nature of the loan and the amount of time allowed for repayment. Advances for seed, manures or cultivation expenses that are repaid at harvest time are regarded as short-term loans. When land is mortgaged as security and the time of repayment extends over a period of years it is termed a long-term loan.

Not all loans can be classified so easily. We find cases where advances have been made, presumably for only a few months, but settlement has been delayed. During the years interest accrues and the borrower's land is taken as security. One case illustrates this point. Eleven years before our interview, Rs. 45 had been borrowed for household expense. The rate of interest was fixed at 50 per cent. While the borrower had made some payments, the interest accrued from year to year and he is now struggling to pay interest on a sum which has grown to Rs. 250. He will hardly succeed in staving off a foreclosure which involves his land.

In order to understand the phenomenon of increasing rural indebtedness it is necessary to note some of the reasons for it. The following opinions expressed by reliable cultivators are significant.

1. *Fall in the prices of farm produce*

This is usually the first reason given by cultivators. 'There is no money to pay expenses.' With no proportionate decrease in tax rates and living expenses, the burden of fallen prices for farm produce weighs heavily upon village people. With the rural standard of living already too low, the only apparent recourse is to borrow. Innocently, men thought that the fall in prices would be only temporary.

2. *A change in the rural standard of living*

During the years of high prices for farm commodities, stamped cloth and artificial silk began to take the place of village-made cloth. Clothing formerly made by the village tailor in exchange for grain must now often be tailored in towns, where money has to be paid. Instead of the little oil lamp using home-produced oil, many families have lanterns burning kerosene oil. Electric torches, watches and other imported goods are common. Motors now ply on many villageroads, and people who formerly spent nothing for local travel now consider motor fares a necessary expense. While these amenities are desirable, they cause a flow of cash from the village to the towns without a corresponding increase in the income from the land. The result has been a steady increase in rural indebtedness.

Let us hope that the number of amenities now available to village people will greatly increase and that with them will come medical help, education and improved roads. But to pay for these and avoid an increased burden of debt, cultivators must increase the income from the land through improvements in husbandry and methods of marketing.

3. *Unfavourable weather conditions*

Referring especially to the Bombay Presidency the curve of indebtedness seems to have risen rapidly during the years 1928-37. In the north the floods of 1927-8 caused loss of crops and property. The frost of 1929 inflicted a staggering blow to the cultivators of the Presidency and to local areas elsewhere whilst 1930 was a lean year owing to maldistribution of rainfall. In 1933, frosts again destroyed large areas of crops. During

1935-6 rainfall was deficient, especially in the northern part of the Presidency. In the winter of 1937 there was a general chilling of crops, with actual frost in some sections.

During these years prices of produce continued low and the wages of labour, already below a decent living wage, were reduced further. For cultivators to pay their land revenue and for labourers to keep body and soul together there seemed but one recourse, to borrow up to the limit of their credit. Village people in general feel that the weather has been against them since 1927.

4. *Speculation and Gambling*

The reasons for the increase in speculation of cotton prices since 1928 seem to be both psychological and economic. Life for the cultivator is often dull, a constant grind of staving off creditors and trying to keep a few measures of grain for his family. When some glib-tongued sharper comes along extolling the opportunities for making money in speculation on cotton prices he takes his chance—there is little more for him to lose, on the other hand he may gain. Many debtors, otherwise poised, have dissipated their last credit in this way. Labourers who toil all day have often been persuaded to put down their annas, denying their families of food for a little excitement and the hope of gain. Little do they know that the dice are loaded against them before they enter the game. There are always glowing tales of big winnings by someone's friend or relative in another village, so they pay up from night to night hoping their turn will come. If a man loses he is silent. If one gains a few rupees it is made much of by the promoters.

5. *Social Expenses*

Expenses of weddings, funerals and other ceremonies are a heavy burden on the villager. He often cannot afford them, but tradition does not allow him to change. There are notable examples of courage in 'simplifying social events and reducing costs, but the average villager still has to fight against the inertia of long-established and long-outlived social customs. Custom rules that for weddings and funerals certain expenses must be incurred. In one backward group a wedding still costs¹ about Rs. 600 and a funeral Rs. 150. The money for weddings is nearly always borrowed at a high rate of interest, and this places a load on a man which may retard him for life. Some ceremonial duties are made imperative by invoking either the blessing or the wrath of God on those who do or do not conform. Rarely does anyone standing alone have the courage to go contrary to such severe 'discipline. To conform is the honourable thing to do regardless of economic consequences. And those who contract debts in order to perform customary ceremonies are regarded as respectable and worthy citizens.

Improvement here can come only through co-operation and continued education. Children and adolescents are the most teachable in such matters. One individual can do very little alone, but yoked with his fellows he will find the courage and social approval to enable him to incur only the expenses he can afford.

Jewellery is still a stifling burden to many. India is said to be the greatest consumer of gold in the world and much of this is used for ornaments. Some orna-

¹ See general note on prices today.

ments are cumbersome and insanitary. If the body is bathed daily and the skin kept fresh and healthy there will be no need and less desire for costly ornaments. The same amount of money used to improve the home and to plant flowers in the garden would bring beauty for all.

6. *High rates of Interest*

With prices of farm produce relatively low, rates of interest for cultivators are higher than they can afford to pay. Co-operative credit societies have accomplished some notable reductions but the average lender left to himself has made little change in his interest demands. Present prices for produce do not permit a rate of interest in excess of $6\frac{1}{4}$ per cent. Our surveys reveal that it is still common for cultivators to contract loans at interest rates ranging from 25 to 40 per cent. We found a day labourer paying at the rate of 150 per cent on a loan of ten rupees. Such usurious rates can only mean increased indebtedness and eventual foreclosure.

7. *Litigation*

Court cases are costly and could often be avoided. Cases involving only a few rupees damage, and the honour of one party, often cost hundreds of rupees. The testimony of an experienced officer is that 'funds for litigation in court are usually borrowed'.

Litigation is especially costly, for in matters of controversy it frequently settles nothing. It more often produces enmity and communal feuds. An active co-operative society or panchayat is needed in every village for arbitration. Quarrels submitted to arbitration are usually settled satisfactorily and the cost is negli-

pate its probable effect on your future life. Seek expert counsel, and by so doing much trouble may be avoided.

5. Teach Thrift in the Village School

Teachers can render a signal service by preparing children to use money wisely. Even small children are keen to learn the true value of things. In the upper primary standards children should have a chance to develop their judgement as to reasonable rates of interest and how to deposit or invest small sums of money. Through school projects as a garden, store or post office, children can gain valuable experience in the use of money.

CHAPTER VI

COTTAGE VOCATIONS

CAN COTTAGE INDUSTRIES SURVIVE?

A MESSAGE India wishes to hear is that Cottage Industries can be quickly and easily restored. If anyone could show the way in which this can be done he would be a great benefactor indeed. India's craftsmen are in distress and those who toil in the fields are idle for many days during which they can do nothing to earn a living. In an effort to bring some help to the people many plans have been suggested for restoring cottage vocations, but the way is not easy.

India has already travelled far toward industrial development. People well understand the advantages of the machine. Goods thus made are often cheaper. Cloth, tape and rope are usually more evenly and beautifully woven by machines. To the manufacturer seeking profit the machine has some advantages over the workman's hand. It neither tires nor becomes ill. It takes no holidays but will work steadily both day and night, if desired. Much of the work once performed by hand is now done by machines.

In many cases the resulting social and economic distress is pathetic. We shall always remember a recent interview with two aged weavers. As boys they had come with their weaver parents from Gujarat to a village in Rajpipla State about forty-five years ago. Working with their father, their homespun cloth found a ready

sale in the country-side and their two crude looms were kept busy all the time. They then began to see mill-made cloth coming in and the demand for their cloth steadily decreasing. Uneducated and conservative, they did not see that there was any adjustment they could make. They could only eat less food and carry on as best they could. But this they could not endure forever. On the day we met them, their old house enclosed on three sides only, was about to collapse. Parts of the two former looms had been tied together to make one. This was idle and they said there had been no work for five months. The elder brother trembling with fever wept as he tried to explain how their whole world had been ruined. Both brothers felt that a dreadful change had come about, wiping out their simple means of livelihood, but they were not aware of anything they might have done to protect themselves.

One of the first services of education is to make village craftsmen conscious of inevitable changes and the need for adjustment. We are not concerned with what cottage vocations were in the past, but with the place they hold today. The whole problem of cottage vocations in a modern world is a complicated one.

India is a land of handicrafts and skill. In carving, weaving, spinning and in shaping gold and ivory her craftsmen are well known throughout the world. By nature they possess the gifts of patience and sustained concentration which minute handwork demands. During a recent visit to an ivory shop we saw a man at work on an inlaid casket measuring 2"×4"×8". We learned that he had been at work developing its intricate patterns for two and a half years and that the price of the box when completed would be Rs. 2,200. The

sandal wood boxes and gold thread work of Surat are other examples of the handwork for which ancient India was famous. Though much suppressed by competition, this native skill is still vital and with encouragement we may expect the finer crafts to survive.

Raw materials for cottage vocations are available. Almost every village has its supply of wood, fibre, leather, stone or clay from which handcrafts may be developed. In the absence of coal and other minerals for industrial development we are forced to look to handcrafts for relieving the growing pressure of population on the land. In 1891, 61 per cent of the people farmed for a living. In 1901 the number had increased to 66 per cent. A recent census shows that 72 per cent of the people are striving to extract a livelihood from the fields.¹

With India's uncertain climate it is not sound economy for three-fourths of the people to live by cultivating the soil. The Governor of Ceylon has observed that 'if the village people are to emerge from their present depressed condition they must give more attention to the development of minor industries as weaving, carpentry, bee-keeping, poultry husbandry, etc.'²

Teachers and others who wish to serve their country will do well to take a sympathetic interest in the development of such crafts as continue to be the mainstay of many villages.

CLASSES OF COTTAGE VOCATIONS

In general there are four classes of cottage vocations. (i) Those that require a high degree of skill, as

¹ P. K. Wattal, *Population Problems in India*, p. 140.

² *The Times of India*, 3 August 1936, p. 9.

carving, lacquer and inlaid work. These crafts are comparatively safe for the present, as machines will be hardly able to imitate the skill of the human hand.

(ii) The common handicrafts requiring less skill as weaving, spinning, and making mats and rope. The people who depend on these are greatly in need of help. (iii) Small-scale or home industries as soap-making, oil pressing and cement work, requiring a small capital and business enterprise but no special skill. (iv) Cottage vocations subsidiary to agriculture, as poultry husbandry, dairying, bee-keeping and gardening.

WHICH COTTAGE VOCATION TO CHOOSE?

This is generally the first question that arises. It is difficult, often almost impossible to set up new cottage industries deliberately unless there arises some special need or advantage due to a fresh supply of raw material or a new market. Efforts to strengthen and modernize existing industries are more likely to be successful. Attempts to establish the silk worm industry in Western India have failed, whereas almost every effort to assist weavers seems to be fruitful. For the purpose of village improvement our chief concern is with the vocations of the last three groups named above, which really are a part of village life. We shall consider several of them.

1. *Weaving*

This is India's oldest and most common cottage vocation. Next to food comes man's need for clothing. We are often told that the day of the handloom has passed, that mills have come to take its place and after a few

years it will be silent. In an effort to understand the situation in regard to weaving, several questions arise:

1. When mills open, what happens to the handloom weavers? Do they continue, enter the mills and work on machines, or give up their work entirely?
2. What is the current tendency in the people's choice of cloth? Is it toward homespun or toward the smooth, thin cloth of the mills?
3. What is the present social and economic position of weavers? What changes or improvements have they introduced during the past ten years?

The Department of Industries of the Bombay Presidency, has recently made a study of weaving which helps us to answer the above questions.¹

In answer to our first question there are at present 523,231 people engaged on handlooms in the Bombay Presidency. The report shows that there are 293 different places where from one to four handlooms operate. In 245 different places there are from five to ten looms and in 453 there are from 11 to 5,000 looms. At centres like Ahmedabad, Surat, Broach, Bombay and Sholapur the numbers of handloom weavers seem to increase steadily. In the town of Anklesvar, Broach District the number of handloom weavers has increased by 30 per cent during the past ten years. Clearly the handloom weaving industry seems to be very vital still, if we consider the number of weavers employed.²

¹ S. V. Telang, *Report on the Handloom Weaving Industry in the Bombay Presidency*.

² For a further discussion see D. Spencer Hatch, *Up From Poverty in Rural India*, pp. 33-40.

EDUCATION AND VILLAGE IMPROVEMENT

Turning to the demand for homespun cloth, the facts are equally encouraging.¹

| YEAR | CLOTH PRODUCED (in millions of yards) | |
|--------|--|-------|
| | HANDLOOMS | MILLS |
| 1896-7 | 784 | 354 |
| 1900-1 | 692 | 422 |
| 1904-5 | 828 | 678 |
| 1910-1 | 508 | 1,043 |
| 1915-6 | 1,048 | 1,441 |
| 1920-1 | 1,148 | 1,581 |
| 1930-1 | 1,355 | 2,519 |

During the years there has been a remarkable increase in the amount of cloth used and handloom weavers have received a good share of the increase in employment. Of all cloth used in India, 30 per cent is still woven on handlooms.

THE ECONOMIC CONDITION OF WEAVERS

First there are those who are both weavers and merchants. They own looms, hire men to operate them and sell cloth to dealers at wholesale rates. Usually, having skilled managers these handloom plants are rather prosperous. Having capital they can experiment with improved looms, develop new designs of cloth and sell to advantage. They employ boys and men for a daily wage ranging from two annas to one rupee. The number of people thus employed increases steadily.

There are also the independent craftsmen-weavers

¹ S. V. Telang, *Report on the Handloom Weaving Industry in the Bombay Presidency.*

who buy yarn, spin it into cloth and sell when and wherever they can. Their economic condition is generally serious. With their crude equipment they can no longer compete with even the improved handlooms. Many are hopelessly in debt. No longer able to buy yarn they weave on contract, with yarn advanced to them by dealers.

A group of these men when asked their chief difficulties replied as follows:—

1. 'We need money at low interest to buy yarn and improved looms. At present we can earn nothing because of high interest.'

2. 'There is no one to buy our cloth. Helpless, we have to turn it over to dealers without profit for our labour.'

To the above might be added the fact that weavers as a class are uneducated, conservative and slow to take advantage of improvements. Naturally, they cannot sell their pieces of crudely woven and often dirty cloth in competition with cloth from mills or handloom establishments, using modern methods for weaving, packing, and selling. Many are intemperate and much of what little they earn goes for liquor instead of education and other improvements in their trade.

WEAVING AS A COTTAGE VOCATION

While independent weavers suffer much distress, there is still hope for weaving as a cottage vocation. Fortunately, weavers usually live in groups at villages where there is a demand for their cloth. From their own statement their chief needs are education, capital and a co-operative society for purchasing yarn and selling cloth.

If weavers' sons were enrolled in schools and while in the upper forms if they be allowed to gain experience on an improved loom as part of their school hand-work, education would be rendering them a signal service. Such education is not intended to produce skilled weavers. Its chief purpose is to give the boys pre-vocational experience so that they will tend to regard the trade with pride. With some pre-vocational experience in hand-weaving on the most improved lines, they will tend to regard weaving not as a thing to neglect and flee from but as a craft to develop and live by.

Therefore, if possible, some weaving instruction should be given in upper primary schools where the children of weavers can attend. The day has arrived when craftsmen must use both their hands and heads. As a class, weavers are static. They have made little change or improvement for hundreds of years. Through education the children will sense the need for change and become eager to develop new and more beautiful patterns. Such training, being pre-vocational, may be simple and inexpensive. Two periods of two hours weekly will be sufficient. One weaving instructor can handle three classes daily and two improved looms costing Rs. 30 each will provide the necessary experience for classes of ten pupils. The cost of yarn can usually be recovered from the articles sold. It will often be possible to find a public spirited person who will offer free of charge a room near the school for such a class. When we come to regard handicrafts as a medium for instruction as other school subjects, we shall find that money thus used represents a legitimate part of the cost of education which must not be neglected any longer. The chief point is to make a beginning and learn from experience.

Another opportunity for helping these people is through co-operation. In this way capital can be had at reasonable interest and materials purchased and sold at suitable prices. One craftsman needing yarn or having a piece of cloth to sell is almost helpless. When joined with forty or more in a co-operative society his strength in buying and selling becomes as great as that of the entire group. Co-operative societies purchase yarn in large quantities and sell to members on a non-profit basis. Likewise the woven cloth is assembled, labelled and packed in an attractive manner so that it can be sold more readily.

As a part time occupation weaving still promises to be profitable. The demand for cloth in India is increasing rapidly. Village people who are the backbone of India intend to go on using homespun cloth for many years. During a recent survey, one hundred farmers were asked if they preferred homespun to mill cloth. More than 80 per cent said homespun is more durable and hence they used it. Several did not consider that there was any alternative to homespun and asked in reply, 'If not homespun, what would one wear?' A good handloom with accessories costs approximately Rs. 40¹ and with care it will last for a lifetime.² In many areas there is not enough land to provide a decent living for all. Given a loom, a trained and energetic farmer can turn to it with great advantage during slack seasons and when crops fail. Where there are growing children it could be kept in use most of the time. A worker of moderate skill can earn from four to eight annas per day, on a good loom. With the loom placed

¹ See general note on prices today.

² Department of Industries, Bombay.

on a verandah or in an open shed the work is clean and healthy.

2. *Rope-Making*

Like clothing, rope is needed in every home. Even in small cottages several rupees worth are needed annually. Much of the rope used in villages is still made by hand. As a cottage vocation it may still be profitable if workers will seek out and use some of the small hand machines which can be made at home or purchased at a low price. With these, fibres can be twisted more rapidly and evenly than by hand.

Rope-making is well adapted for teaching in upper primary schools as a handcraft. The equipment is inexpensive, simple to operate and the raw fibre is available in any village. There need be no operating expense, as the finished material can be sold for more than its cost.

Rope-making can be developed as a cottage vocation, especially in rural villages. With approximately Rs. 15 the necessary equipment and a supply of fibre can be purchased. A young man who is trained and energetic both in preparing rope and in selling it can earn from four to eight annas per day.

3. *Woodcraft*

Woodcraft offers many opportunities for employment. The average village carpenter has but few improved tools. He makes a few simple and rather crude articles, the styles of which are rarely changed from generation to generation. Here there is scope for energetic craftsmen, skilled in making new models that are light, durable and beautiful.

Of all crafts, woodwork is the most suitable for a

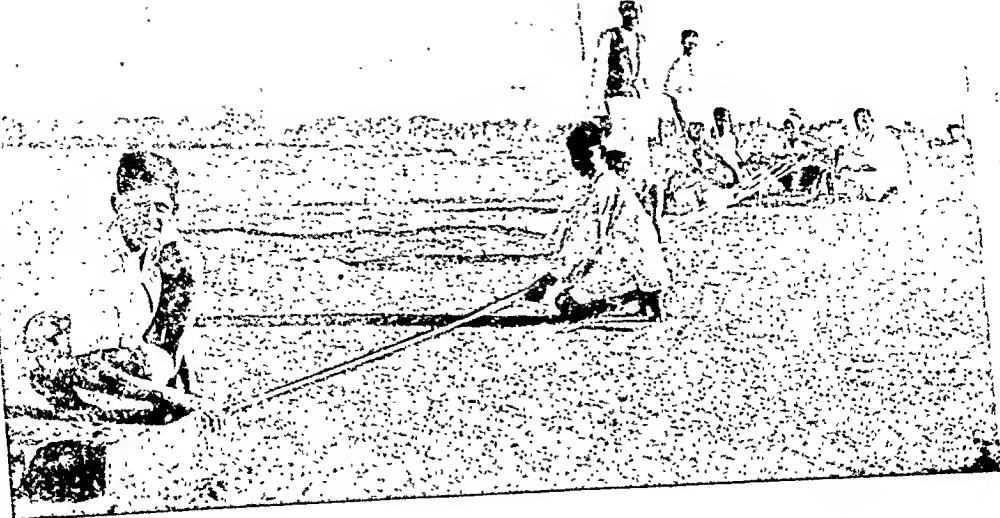
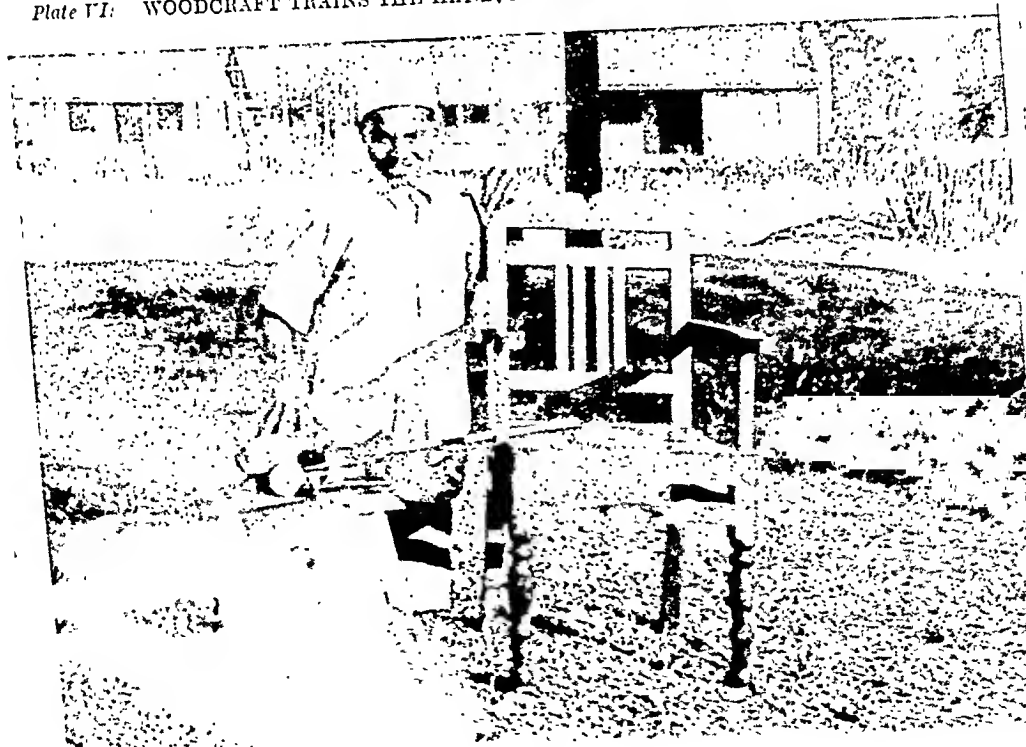
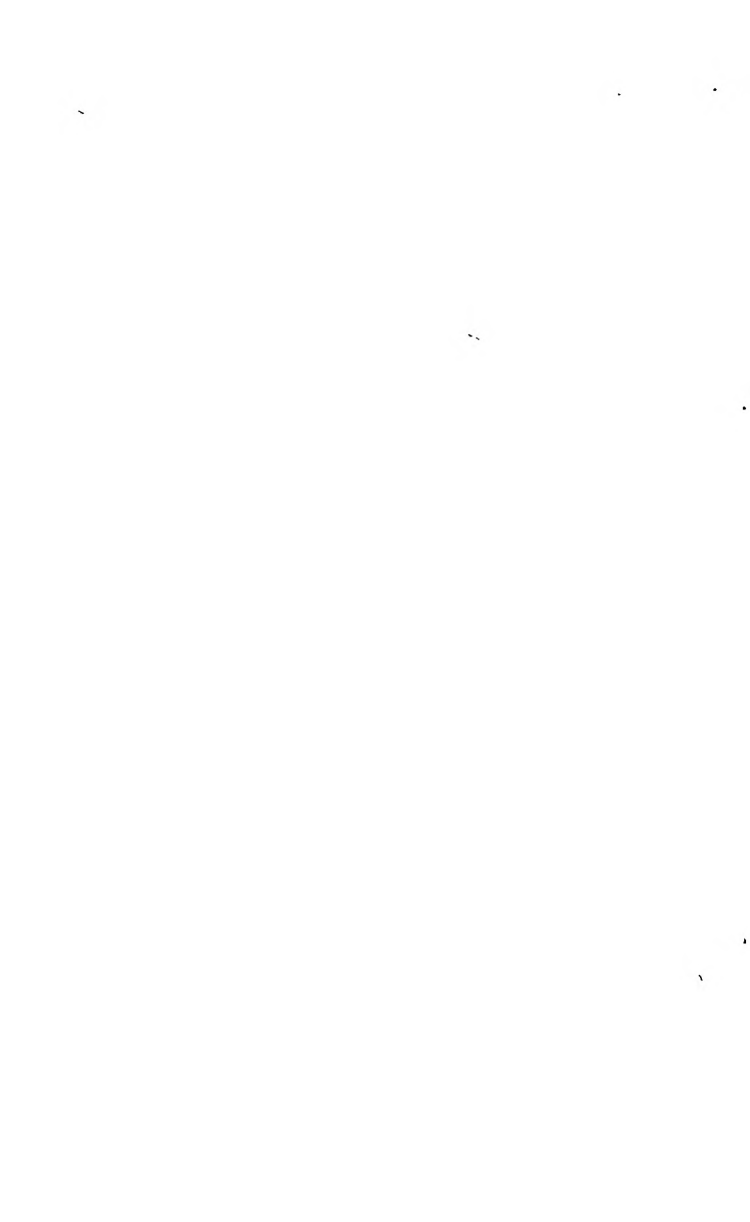


Plate V: ROPE-MAKING

Plate VI: WOODCRAFT TRAINS THE HAND, MIND AND HEART





pre-vocational subject in schools. Apart from being a clean, healthy exercise, woodcraft provides ample opportunities for developing originality, initiative and skill. While often referred to as 'manual training' it really trains the hand, mind and heart. As a boy plans, draws and makes a project he learns to think. In woodcraft there is no cheating nor copying, each sees his own work clearly before him. *Perhaps the most meaningful experience that can come to an adolescent youth is to complete something of use and beauty with his own hands.*

When introducing woodcraft into schools it is well to have one who is a trained instructor to do the teaching. Attempts to use the local carpenter are seldom successful. He may know his trade well but seldom will he have the special ability to conduct classes. Teachers who show an interest in woodcraft may be sent for a two or three months' course of practical training in a vocational school. Boys of the upper primary standards may be admitted to woodcraft classes and as a beginning, two or three hours per week for practice will be sufficient. From the list of tools shown, it may be seen that the expense of equipment need not be prohibitive. Every rural youth, in fact every boy, whatever occupation he chooses, should have some experience in the use of tools during his school days.

Boys trained in carpentry while in school are finding many uses for it in their village homes, both as a cottage vocation subsidiary to agriculture and as a full time occupation.

TOY-MAKING

For years educationists have been showing us that toys are essential to the proper development of the

child's personality. There is now an opportunity for carrying on a good enterprise in the making of wooden toys from packing cases. The cheap bazaar toys made from tin and celluloid break quickly and the sharp edges are dangerous to little hands and eyes. Children most appreciate small models of animals on wheels, carts, tools and articles of furniture. Village children have few toys and whoever supplies this need will earn a living and yet render a service to them.

From a packing case, costing three rupees and paints costing two rupees a clever workman could make and sell toys worth nearly ten rupees.

The following tools and materials are needed :

Tools¹

| | | | | | Rs. | as. | ps. |
|---|----|----|----|----|-----|-----|-----|
| a hammer | .. | .. | .. | .. | 1 | 4 | 0 |
| a plane | .. | .. | .. | .. | 0 | 12 | 0 |
| 2 chisels— $\frac{1}{2}$ ", $\frac{3}{4}$ " | .. | .. | .. | .. | 1 | 0 | 0 |
| a small saw | .. | .. | .. | .. | 1 | 2 | 0 |
| a coping saw and blades | .. | .. | .. | .. | 0 | 12 | 0 |
| a knife | .. | .. | .. | .. | 0 | 8 | 0 |
| | | | | | Rs. | 5 | 6 0 |

Materials¹

| | | | | | Rs. | as. | ps. |
|------------------------------------|----|----|----|----|-----|-----|------|
| 1 large wooden packing case.. | .. | .. | .. | .. | 0 | 12 | 0 |
| paints—(assorted colours) | .. | .. | .. | .. | 0 | 10 | 0 |
| nails and screws | .. | .. | .. | .. | 0 | 6 | 0 |
| bits of broken glass for smoothing | .. | .. | .. | .. | - | - | - |
| | | | | | Re. | 1 | 12 0 |

¹ See general note on prices today.

Toys should be durable and well designed, and colours should be used freely. Pictures from magazines may be traced on the wood with carbon paper and the models cut out with a coping saw.

4. *Fibre Mats*

The date palm provides leaves that are excellent for mat-making. Yet, the mats as made and offered for sale are often crudely woven, without paying attention to the use of colours and artistic design. As a result the price is low and the demand limited. Thousands of rupees are paid annually for mats that are imported, merely because they are coloured and more neatly woven.

As the date palm leaves are available for the plucking, the price of mats sold represents a net turnover. The date palm leaf appears to be as strong as the material used in imported straw mats. Our hand-woven mats last but a few months whereas the imported ones last four or five years. By the use of dyes we can make date palm mats that are really beautiful and if they are well sewn at the seams with cord they will last ever so much longer.

5. *Soap-Making*

The use of soap is increasing steadily and we find a demand for it almost everywhere. As oil, the chief ingredient of soap, is a farm product it is natural that soap-making should become a village industry.¹ A man with a flare for business and not afraid of work can make a good living in this way. The minimum equipment required for making soap for sale is shown overleaf.

¹ For simple formulæ see Chapter IV..

EDUCATION AND VILLAGE IMPROVEMENT

| Materials ¹ | | | | Rs. | as. | ps. |
|---------------------------------------|----|----|----|-----|-----|------|
| two iron basins @ as. 10 each | .. | .. | .. | 1 | 4 | 0 |
| one sheet-metal mould, 10-lb. size | .. | .. | .. | 2 | 8 | 0 |
| drums for oil | .. | .. | .. | 1 | 8 | 0 |
| waxed paper for wrapping | .. | .. | .. | 0 | 8 | 0 |
| 1 $\frac{1}{4}$ md. oils | .. | .. | .. | 10 | 0 | 0 |
| 5 lb. alkali (caustic soda) | .. | .. | .. | 0 | 12 | 6 |
| 3 lb. sodium carbonate (washing soda) | .. | .. | .. | 0 | 3 | 0 |
| vegetable colours | .. | .. | .. | 0 | 2 | 6 |
| Total | | | | Rs. | 16 | 14 0 |

Soap made from pure oils and alkali is superior to ordinary soap sold in the bazaar. When the people learn this they will purchase it more readily. The one who prepares the soap for sale should have his stamp or trade mark whereby it can be identified.

Sales are the most difficult part of the task, but he who makes a good product and maintains regular supplies will generally succeed. The soap should be wrapped neatly in paper to give it an attractive appearance and prevent drying out quickly. With practice we can learn to tint it in different shades by adding colouring matter. The amount earned will depend on the individual but if a man works diligently and is assisted by members of his family he may be sure of a good income. It is important that the formulæ be closely followed so that the soap may always be of the same quality. We are informed that twenty pounds of oil made into soap and sold will yield a profit of about Re. 1-8.

COTTAGE VOCATIONS SUBSIDIARY TO AGRICULTURE

The cottage industries discussed above are proving a great help in the improvement of village life, but for

¹ See general note on prices today.

COTTAGE VOCATIONS

those now living directly upon the land the greatest hope is in more diversified and intensive agriculture. Due to dependence on monsoons much of the farm work has to be crowded into a few months of the year. This leaves the people without productive work for a number of months. In Bengal it is estimated that field workers have an average of 136 working days per year. In the juar-cotton tracts of Broach District, which are typical of one crop farming in India, farmers receive about 142 days of work per year as shown in the table below.

Table showing the approximate number of days of employment provided for the operator of a ten acre holding planted with cotton and juar in Broach District.

| Month | | | Days of Employment |
|-----------|----|----|-----------------------|
| January | .. | .. | 12 |
| February | .. | .. | 24 |
| March | .. | .. | 22 |
| April | .. | .. | 18 |
| May | .. | .. | 8 |
| June | .. | .. | 10 |
| July | .. | .. | 12 |
| August | .. | .. | 8 |
| September | .. | .. | 12 |
| October | .. | .. | 10 |
| November | .. | .. | 5 |
| December | .. | .. | 4 |
| | | | 145 |

The people cannot earn enough during the season of employment to support them throughout the year and as a result they suffer much during the slack seasons. To meet this need various cottage industries have been suggested. From experience we have learned, however,

that the hands which have been accustomed during life to hold the plough or the sickle cannot turn readily to the loom or the spindle. This is especially true of the uneducated and for those now working on the land the greatest hope is in developing the cottage vocations that are subsidiary to agriculture.

1. *Home Gardening*

Almost every home has at least a small plot of idle land. This may become a basis for one of India's most needed cottage vocations, home gardening. Accustomed to a grain diet, people have often neglected gardening. Children are active and delight in growing plants and for this reason the teacher more than anyone else is in a position to restore home gardening to its rightful place.

HOW TO MAKE A PUPIL'S HOME GARDEN

For the first year the garden should be small. A plot $4' \times 5'$ will be sufficient for a child of the third or fourth standard. It should be a joy and not a burden to a pupil and his parents. A small garden well cared for will yield more than a larger one with insufficient care. The soil should be well spaded and manured early in June, and fenced in with thorns on all sides. With the coming of the first rain the soil should be well cultivated and the seed planted.

A common tendency is to plant too many different crops within a small area and space the plants too closely. Plants that are crowded cannot yield properly. For the interest of the children it is best to select only two or three sturdy monsoon crops which grow rapidly. For the Bombay Presidency corn, gowar, lady's

finger, bitter gourd and vegetable marrow are recommended. The last two should be trained to climb on a fence. A pupil's home garden has often been the beginning of parents' interest in converting idle land into profitable gardens.

One man who has no well makes a monsoon garden about 30' × 40' in size and chooses the crops so that without irrigation there is a supply of vegetables for his family for five months. While giving sufficient space for the plants he is careful to have all the ground occupied and he estimates that the annual produce from his garden is worth at least Rs. 45.

Where a well is available for irrigation, two or three crops per year can be grown. A small plot measuring 20' × 30' will produce sufficient vegetables for an average family.

2. *Fruit Growing*

Limes, pomelo, oranges, papayas and guavas will thrive in many places. The papaya is the most easily produced. Grown from seed planted early in June in well tilled and manured soil, plants will produce ripe fruit within sixteen months. During monsoon surplus water must be drained away and during the winter water should be given weekly. Only female plants, having short blossom stems, bear fruit. Male plants which have long blossom stems should be discarded as soon as they can be identified. An average papaya tree will produce about twenty fruit, or forty pounds per year.

Lime trees are next easily grown to the papaya. Grafts obtainable from gardeners at approximately one rupee each will bear fruit after three years of care. An

maturity will repay it. To hatch chickens and have them destroyed by animals is too great a loss for village people to endure. Have a pen ready for the chicks the day they are hatched *and keep them in it* until they are old enough to care for themselves. The pen may be moved to fresh ground each day.

ABOUT FEEDING CHICKENS

For feeding small chickens the following grain mixture is recommended:

| | |
|----------------------------|---------------|
| 10 lb. Juar (giant millet) | 2½ lb. Millet |
| 5 lb. Wheat | 1 lb. Gram |

This mixture should be ground moderately fine. Buttermilk or whey should be fed once or twice a week. After the first ten days chopped onions or other green feed should be given daily. In addition to the above, fresh water, crushed charcoal, gravel and crushed limestone or shells should be available all the time. The grain should be fed from a clean trough three times a day and green feed once daily.

The following mixture is recommended for laying hens:

| | | | |
|-------------|-------------|--------------|-----|
| 20 lb. Juar | 5 lb. Wheat | 3 lb. Millet | ... |
|-------------|-------------|--------------|-----|

About three ounces of grain should be fed daily to each bird. It is often helpful to soak the grain for twelve to twenty-four hours before feeding it. Whey or dried fish should be fed at least twice a week. For both chicks and laying hens onions and green feed are necessary; the green feed daily and onions once a week.

During a year a good hen produces eggs weighing from four to six times her own weight. In order to do this she must have good food. Selected hens will

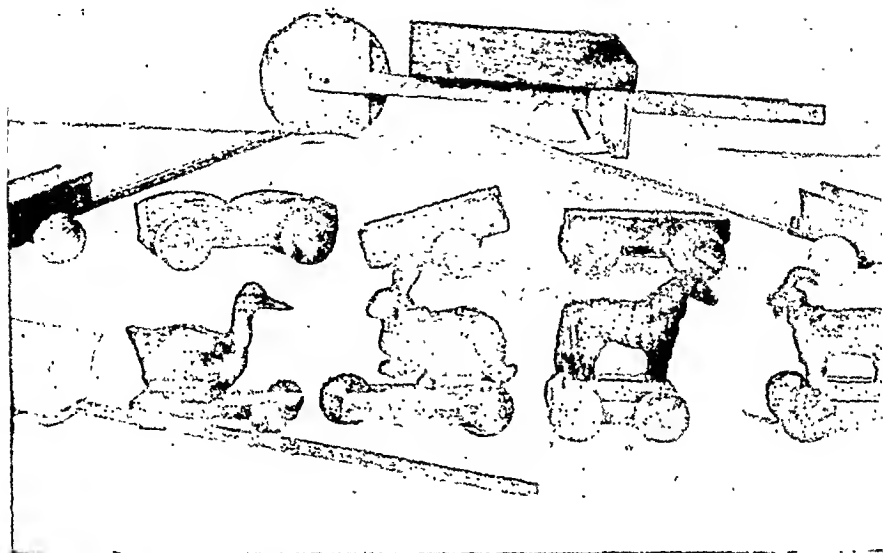
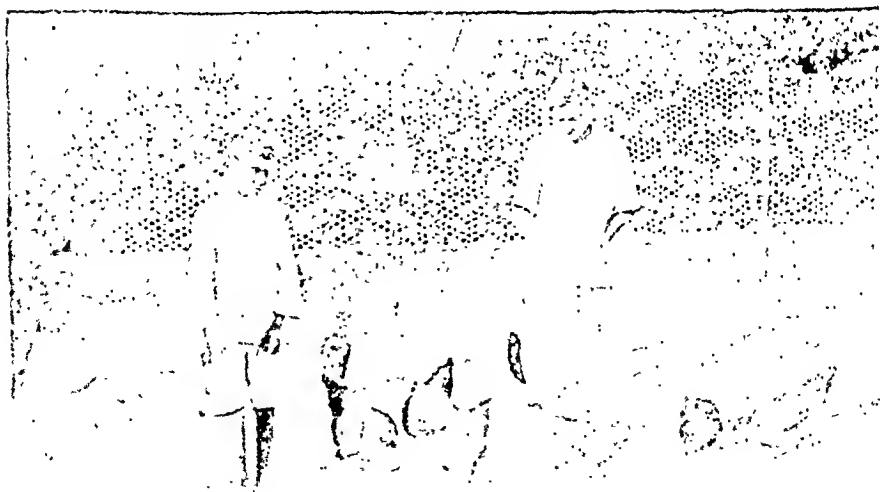


Fig. VII TOYS MADE FROM A WOODEN BOX

(See p. 81)

Fig. VIII SCHOOLBOYS FEEDING IMPROVED FOWLS



produce eggs in proportion to the feed they get, so it is profitable to feed well.

A NOTE ABOUT INSECTS AND DISEASE

The first step in the control of insects and disease is cleanliness. The pens must be kept clean. Throwing ashes or lime with force against the sides, floor and into crevices will do much to repel insects. Kerosene oil painted on the sides and poured into any cracks will help to destroy ticks. Vessels for feed and water must be kept clean. Potassium permanganate should be given with drinking water once a week. Epsom salt also may be used to prevent intestinal parasites, one teaspoonful to a pint of drinking water given weekly. At the first sign of any epidemic the nearest veterinary surgeon should be consulted.

A POULTRY GROWERS' CLUB

Several schools are fostering village poultry clubs. This is a simple organization where members breed pure-bred fowls for both pleasure and profit. The chief rules to be followed are that all shall keep only pure-bred fowls of the breed prescribed by the club, that they will observe the rules of sanitation and feed only the ration recommended as far as possible. The village school is the logical meeting place for such a club and for the first few years at least, the teacher is the logical leader. The sale of eggs is discussed in Chapter X.

4. *Dairying*

Another method for turning spare time into profit is to keep several good dairy animals. An improved milk cow or Surti buffalo with proper care will pro-

duce at least 3,000 pounds of milk per year. Experience suggests that pure-bred general purpose cows are preferable to buffaloes for the small cultivator. The initial cost is less, they are less temperamental and the bull calves provide an added income. Cow's milk is more wholesome than buffalo's milk and there is an increasing demand for it.

For those who cannot afford the upkeep of cows, goats are helpful, for their initial cost is low, and they are hardy and easy to maintain. Only good animals capable of producing from three to five pounds of milk per day should be selected. As a food, especially for children, goat's milk is superior to the milk of cows or buffaloes. Goats can be maintained at little expense and provide employment for children out of school hours.

Perhaps the greatest usefulness of dairying as a cottage industry is in supplying the milk needed for growing children. In one school of over thirty children none received milk as a food. A very few were receiving about one pie worth with their tea. Apart from keeping cows as a source for supplementing the family income there must be a great increase in their numbers and an improvement in the quality of milk in order to nourish growing children. It is impossible to develop a keen and alert mind in a starving body.

THE PLACE FOR INDUSTRY

Cottage vocations will always serve a useful place in India but we need also to take advantage of electricity and other forms of power. As population increases more and more people must seek employment off the land. Small factories employing ten or more people can often add much to the wealth of the people.

CHAPTER VII

AGRICULTURE AND THE VILLAGE SCHOOL

AGRICULTURE and rural education are interdependent. The modern teacher draws many of his best illustrations and much of his subject matter from agriculture. He must look to the farmer for the financial support of his school. In return, the farmer may find that the ideal school is an important factor in the improvement of agriculture. The teacher's library contains books and magazines of special importance to farmers and if he has vision he will see in his classes the future farmers of India and their wives. It is natural therefore, that the village teacher and his school should be a channel through which knowledge for the improvement of agriculture may flow.

This chapter is not intended to be a treatise on agriculture. Several such books are available and the Department of Agriculture in each province can usually supply leaflets to those who apply for them. It is our purpose here to consider the village school and agriculture, the teacher and the cultivator in their relation to each other. No longer can each go his own way. The teacher must rely upon the farmer for the support of his school. The farmer must look to the school for life-giving knowledge to be poured into the village through his children. *Improvement of rural life usually*

begins when the village teacher and the people take up the task jointly.

There are difficulties, but probably none that are peculiar to India alone. Parents in other countries were at first opposed to the teaching of agriculture in school. 'Have we not been farming all these years?' they asked. This is not 'learning'. But the more alert parents were not so. They soon saw in the 'new learning' some hope for improving life and easing some of its burdens for themselves and their children. Pupils came home talking about the lessons and experiments at school. After several years those who at first opposed it, began to see the school as an institution for the improvement of agriculture and rural life as well as for teaching.

There are several important steps in the improvement of agriculture: (1) improvement of the soil, (2) improvement of livestock and (3) increasing crop yields. These should become the concern of every rural teacher. Such improvement cannot be achieved within a short period of a year or two. In the beginning, perhaps the highest service the teacher can do for agriculture is to become well informed and enthusiastic for its improvement. Unconsciously his interest will spread to his pupils and throughout the village.

We hear complaints that seasons are no longer favourable to agriculture, that the years are 'weak' and the times bad. Some view weak years and bad crops as signs of God's displeasure but the real reason for failure often rests with man himself.

AGRICULTURE AND THE VILLAGE SCHOOL

Table Showing Comparative Average Yields for Wheat and Rice for India and for Other Countries, for the three Crop Years, 1939-41.

| Country | Average Yield 1939—1941 |
|---------------|----------------------------|
| <i>Rice:</i> | <i>Pounds per Acre</i> |
| British-India | 1,094 |
| China | 2,283 |
| Korea | 2,184 |
| Japan | 3,409 |
| <i>Wheat:</i> | |
| British-India | 672 |
| Japan | 1,820 |
| Netherlands | 3,034 |
| United States | 851 |

Even young children will be impressed by the opportunity and great need for doing all possible for the improvement of crop yields.

1. Soil Improvement

While the soil is limited in the same manner as any other natural resource, we have usually treated it as if it was inexhaustible, capable of enduring any form of abuse and neglect. Manure has been wasted and burned, fields cropped and the top soil left open to be washed away to the sea during monsoon. A depleted soil is more difficult to till than a fertile one and it can yield a fair crop only if the season is favourable.

It is not assumed that the teacher and his classes will directly undertake soil improvement, yet with the loyalty and imagination of youth we find that the

classroom is the most effective place to begin such teaching. *The soil is more than a subsistence for the present generation. It is a sacred heritage, to be transmitted to the future unimpaired.*

There are several clear and simple steps for improving a depleted soil. Fortunately these are readily within the reach of school children and some are given below:

1. Conserve manure and waste in pits.
2. Use green manure crops.
3. Prevent erosion.

1. One of the greatest needs of Indian soils is humus. This is a dark powder-like substance which results when leaves and other vegetation decay. In forests it is called leaf-mould and it helps to explain the high fertility of virgin soils. Humus makes the soil friable and increases its capacity to hold water, as shown from the following table.¹

| <i>Soil</i> | | <i>Moisture in pounds per cu. ft.</i> | | |
|-------------|----|---------------------------------------|----|------|
| Sand | .. | .. | .. | 27·3 |
| Sandy clay | .. | .. | .. | 38·3 |
| Loam | .. | .. | .. | 41·4 |
| Humus | .. | .. | .. | 50·1 |

As the humus percentage of any soil increases, its power to retain moisture also increases. This helps to explain why an improved soil will often yield a satisfactory crop during a year when crops fail on poor fields.

A soil that lacks humus usually lacks nitrogen also. Nitrogen is said to be the most important plant food, for it is generally the first exhausted.

A manure pit serves a double purpose for it helps to keep the village clean and the manure thus prepared

¹ P. Vivian, *First Principles of Soil Fertility*, p. 95.

improves the soil. If fields are protected from erosion the effects of the application of manure will be seen in crops for five or six years.¹ Manure as a fuel is poor and dirty. If pitted and applied to the soil the increase in crop yields will pay for wood fuel. All village waste including coarse grass, stalks and sweepings should be mixed with the manure and urine from the livestock for pitting. Ashes especially, should be used under the cattle at night so that all urine is saved. This is of special value to the soil. Manure saved from a yoke of oxen and one cow or buffalo and mixed with sufficient stalks and waste will produce from twenty to twenty-five cart-loads of compost each year.

2. Where hemp, dencha or any other suitable green manure crop can be grown this is the cheapest and best way for supplying nitrogen and humus to the soil. Hemp seed is sown broadcast at the rate of eighty pounds per acre before the monsoon begins. The seed is covered lightly and allowed to grow for about six or eight weeks. It will then be from two to five feet tall and the small nitrogen nodules can be seen on the roots. The stalks are then ploughed under with an iron plough. Such ploughs can be purchased at prices² ranging from fifteen rupees and upward. Their durability makes them cheaper in the long run than wooden ploughs. If no iron plough is available the ordinary wooden one may be used but more time is required and the work will not be done so well. Two showers of rain after the hemp has been ploughed under will provide sufficient moisture to decay it and the field will then be ready for the next crop.

¹ See Chapter IV.

² See general note on prices today.

On an average soil in a normal year, there will be an increase of about 15 per cent in the yield of the first crop following hemp. The next year will show an increase of about 20 per cent. The increase in yield is easily noticeable for four or five years. The yield of an average run down soil can be doubled within a period of six years by using hemp and compost manure in alternate years.¹ An acre of hemp in normal circumstances will produce the equivalent of about twenty cart-loads of manure. The increased cost of labour for ploughing under the hemp is not great since the soil is being prepared for the next sowing at the same time.

3. Monsoon rain often comes in torrents and unless the fields are levelled and well provided with flood channels, tons of plant food are carried away. A great virtue of green manure crops is that they keep the soil covered and prevent erosion during monsoon. The muddy torrents of streams and rivers are generally saturated with plant food. Any time and money used to prevent soil erosion is usually well invested.

4. Much of India's soil is 'tired' and certain upland areas are badly eroded. The uneven growth of crops on rolling lands and the muddy rivers during monsoon tell a story of tragic loss of valuable plant food. It is the responsibility of the teacher to instil attitudes of stewardship and conservation in the minds of his pupils. India's soil is rapidly being spent and it will require the imagination and vigour of youth to turn the tide.

Briefly there are three kinds of erosion:

¹ Vocational Training School, *Farr Project Records, 1930-7.*

(1) Sheet erosion, where the top layers of soil are slowly worn away.

(2) Rill erosion, where the little rivulets of water cut small grooves as they flow down any hillside.

(3) Gulley erosion, where in steeper areas deep gullies are cut which waste vast areas of land and make cultivation difficult.

Pupils should be taught to recognize each of these. Clearly the best place to quicken an attitude toward conservation is with children in the school.

2. *Livestock and Tillage*

Plants require a deep, well pulverized soil in which to grow. Too often seed is scattered in only a shallow layer of coarse lumps of soil. Failing to find sufficient food the plants mature early and the yield is low. It is a part of the village teacher's task to acquaint his boys with the rewards of good tillage. He will point out the differences between good and poor cultivation and encourage his pupils to observe the results of both.

For good tillage strong oxen and adequate tools are essential. Improved farm tools are now available but without strong oxen they are of little use to farmers. Sturdy oxen make a farmer's work lighter and the milk sold from improved cows enhances his income.

We hear so much about puny cattle that one is almost led to despair. It is refreshing to learn that there are some good breeds of cattle in India awaiting development. In the different provinces there are breeds that seem best suited to the particular area. As a matter of interest several of the most common breeds are noted below.

EDUCATION AND VILLAGE IMPROVEMENT

| <i>Breed of cattle</i> | | | <i>Locality</i> |
|------------------------|----|----|-----------------------------|
| Gir | .. | .. | North Gujarat and Kathiawar |
| Kankrej | .. | .. | Gujarat |
| Sindhi | .. | .. | Kathiawar and Sind |
| Montgomery | .. | .. | Punjab |
| Hariana | .. | .. | Punjab |
| Surti Buffalo | .. | .. | Bombay Presidency |
| Delhi Buffalo | .. | .. | North India |

IMPROVING CATTLE

Procure a pure-bred sire, as he is worth at least half the herd. Ordinary cows mated to a superior sire will produce sturdy calves that are half pure; a great improvement. The second generation will be three-fourths pure. Village people in co-operation can usually procure a pure-bred sire from Government at reduced cost through the district agricultural officer. Where there is a real desire on the part of the people it is often possible to secure a bull as a gift. It is strange that during the time when Lord Linlithgow emphasized cattle improvement the number of gift bulls offered in some cases exceeded the number of calls for them. With a good sire and some additional care it is possible to transform the cattle of a whole village within eight years. The result is strong oxen, and cows which produce more milk.

GOOD CATTLE MUST BE FED

There is a vicious circle here. As village cows produce little or no surplus milk, cultivators seldom feed them with grain. In return for such neglect cattle become weaker from year to year and still more oxen are needed to cultivate the same amount of land. It is said that 'few

village cows die from old age. Sooner or later they must die for want of food.' Of some villages at least, this seems true.

In feeding, one of the first needs is good pasture. The area is often sufficient, but the land is either badly eroded or overgrown with useless shrubs. Most pastures need to be levelled, cleared of shrubs, manured, cultivated and reseeded. For this, the co-operation of the village people is essential.

The area used for fodder crops should be increased. Juar, Elephant and Napier grass may be more profitable in the long run if fed to good livestock, than cotton and cereal grains grown for sale. The feeding of grain is essential to both cows and oxen. One or two good animals well fed are worth more to a farmer than a larger number poorly fed. One cultivator who feeds and cares for his cattle well, informed us that during thirty years of farming he has not lost a single animal except from old age.

THE GENERAL CARE OF LIVESTOCK

For livestock there should be an outdoor shed, closed on three sides for protection from rain or cold. To keep animals in the house is usually injurious to the health of both man and beast. The floor of the shed should be smooth, dry and covered with grass, leaves or straw.

Regular bathing and cleaning are essential to good health. Cattle should be cleaned and rubbed with a brush daily and bathed with water at least once a week. They need an abundance of clean water to drink. The water of many of the ponds and streams is unfit for animals. Left to themselves they will seek pure water instinctively.

The forest was the original home of our domesti-

EDUCATION AND VILLAGE IMPROVEMENT

| <i>Breed of cattle</i> | | | <i>Locality</i> |
|------------------------|----|----|-----------------------------|
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| Kankrej | .. | .. | Gujarat |
| Sindhi | .. | .. | Kathiawar and Sind |
| Montgomery | .. | .. | Punjab |
| Haryana | .. | .. | Punjab |
| Surti Buffalo | .. | .. | Bombay Presidency |
| Delhi Buffalo | .. | .. | North India |

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The forest was the original home of our domesti-

cated animals. There they could roam at large for exercise and take food and water when they needed it. In taming them we have taken away their freedom so they must now rely upon us for care.

Domestic animals are the farmer's friends and helpers, yet every year thousands of cows and oxen starve to death and others die through neglect in various ways. Only the number of animals necessary should be kept. Thousands of rupees are spent annually for ox goads. Some of these may be needed but more often better food, water and proper handling would be more effective.

KINDNESS HAS ITS OWN REWARD

It is a bad practice to beat and scold animals. In many cases there is great loss from unkind treatment. Cows that are frightened through beating or shouting will give less milk. Oxen that are stoned, scolded or beaten tire more easily than those that are treated firmly but kindly. There are few lazy oxen. Usually the lazy ox is dull because of neglect or unkind treatment. Animals are intelligent. They will respect and usually obey a master who understands their nature and treats them well.

3. *Seed Selection and Crop Yields*

The seed contains the germ of life and food necessary to nourish the young plant until it can procure food through its own roots. From experience we know that like tends to beget like; so it is important that we select seeds from strong, healthy plants that yield well.

It is still a common practice to plant seed taken from the family grain bin, or purchased from grain

merchants. That is grain but it cannot be called seed. Samples of ordinary juar examined, contained the following percentages:

| | | | | |
|---------------------------|----|----|----|----|
| Strong healthy seed | .. | .. | .. | 35 |
| Medium and small grains | .. | .. | .. | 30 |
| Broken grains | .. | .. | .. | 7 |
| Grains damaged by insects | .. | .. | .. | 18 |
| Dead seeds | .. | .. | .. | 8 |
| Foreign matter | .. | .. | .. | 2 |

Only about one-third of the grain that comes from bins is fit for use as seed. For grain crops as juar, wheat, rice and millet it is best to select seed from the plants in the field. The yield of crops can be improved if heads for seed are selected each year from strong healthy plants.

The selection of heads for seed from a nearby field is an excellent exercise for older children of the school. The teacher should first secure permission from the owner and arrange for him to be present if possible. Before beginning, each pupil should learn to recognize the type of head that is desired. Several such periods spent with the pupils in practical demonstration will do much more toward developing village-wide interest in improved seeds and varieties than lectures in the class or to older people. Many a movement toward better crops has begun in this way with an alert teacher and a class of energetic boys.

Selected heads should be threshed separately and the grain carefully cleaned, dried and stored. Grain contains much moisture when newly harvested, so it must be placed in the sun until it is thoroughly dried. It should then be stored in a clean bin, away from moisture and

insects. Wood ashes or tobacco dust mixed with the seed will help to repel insects.

An interesting experiment is to allow the pupils to plant one hundred grains of their selected seed and one hundred grains taken at random from food grain, side by side in the garden. The difference in time required for germination in the growing plants, and finally in the harvest, will be so apparent that all will be convinced as to the importance of good seed.

THE USE OF SULPHUR TO PREVENT SMUT

Another interesting class experiment is the treatment of juar seed with sulphur to prevent smut. Sulphur for this purpose can usually be procured from the village Patel. One ounce is needed for every forty pounds of seed. It is best if one of the older boys brings his father's seed to the school for treatment. The owner of the seed will generally supply the sulphur gladly.

The reason for the use of sulphur should be clearly explained to the class and the procedure outlined so that the work may be done well and in such a way as to provide experience for as many of the pupils as possible. The grain is first placed on a clean floor. The sulphur powder is then sprinkled on and the seed stirred until each grain is coated evenly. It should then be planted as soon as possible.

INVITE THE AGRICULTURAL OVERSEER TO VISIT THE SCHOOL

In many districts Government is performing interesting experiments in the improvement of plant varieties and in the control of plant pests and diseases. The agricultural overseer should be invited to the school

at least once a year to explain to the older children the wonders of this useful and interesting work. He can often supply posters, charts, and bulletins to schools without cost.

From the standpoint of education one of the effective methods for developing the mind and character of youth is to awaken an interest in some of the practical things by which men live, as better livestock, improved soil, seeds and plants. The teacher who leads his pupils along this path will not only help to improve agriculture, but also raise the level of village intelligence as well.

CHAPTER VIII

FARMING AS AN OCCUPATION FOR INDIAN YOUTH

WHILE India is an agricultural country and at least seven-tenths of the boys living today will eventually become farmers, the tendency of education has often been to disqualify rather than prepare them for farming. The average youth still looks to education as an escape from agriculture instead of a preparation for it. Eventually, as it often occurs, the way to a salaried position is closed, and he is forced to take up agriculture as an occupation. He considers himself unfortunate and his parents speak of the time and money spent in school as wasted.

While it is not desirable that the teacher should attempt to make future farmers of the boys in his classes, it is a strange paradox that knowledge of agriculture as an occupation should be withheld from them in nearly all schools. As far as possible a boy should be free to choose the occupation for which he is best fitted, but without some knowledge and guidance during his years in school he is not in a position to choose wisely.

Today many young men in villages are unemployed for it does not occur to them that agriculture is an occupation which requires study and intelligence as well as brawn. Like accounting, medicine or teaching, agriculture is now an occupation in which careful study,

knowledge and skill are required. The village teacher should be qualified to acquaint his older pupils with some of the requirements and opportunities in agriculture as an occupation. Thus armed with information the boys can choose and prepare themselves wisely.

The need for soil improvement, pure-bred livestock, improved varieties of plants and the demand for many social improvements in the country-side make it essential that the farmer be a cultured and educated man. The time has come when his judgement in such matters is as important to him as the work of his hands. Many of the social and economic tragedies of village life today are due to the old belief that anyone can farm. Careful observation convinces us that under present conditions only those who are well qualified can farm successfully.

THE FARMER'S QUALIFICATIONS

The primitive man dug the soil with a hoe, scattered seed and waited for the crop. The modern farmer tills his soil with improved implements and studies its chemical composition so as to supply the elements that are deficient. He selects varieties of plants and animals with great care and studies the growing crops in order to prevent loss from disease or insects. When harvest time comes he must have the qualities of an intelligent business man in order to sell his crops to advantage. More and more the problems of education, village health and social reform rest on his shoulders. He needs adequate education.

Merely to read and write will not be sufficient. The farmer must have a broad training which will include some simple and practical knowledge of business

methods, physics, chemistry, botany and community hygiene. He will need some elementary pre-vocational experience in manual training to develop skill and accuracy in the use of improved implements. He should have some interest and appreciation for good literature and current social problems, as the farmer is first of all a husband, a father and a citizen. The present middle school course with agricultural bias would seem to be the very minimum requirement. Some higher education of the proper sort would be an added advantage.

In character a farmer should be honest and industrious. With the urgent need for co-operation in establishing standard grades of milk, eggs, fruit and grain and the need for investing public funds wisely for rural improvement, the most valuable assets of the future farmer are honesty and integrity. He must be a man of good judgement and common sense. He needs often to make important decisions quickly and without help or advice. He should cultivate a love for nature. The modest feeling of pride that comes from driving a sturdy yoke of oxen or the feeling of wonder that comes from watching the bloom and growth of plants, are a part of an improved farmer's compensation which cannot be counted in terms of money. More than this, the farmer will realize that he is a partner in the use of forces greater than himself. The seasons, the sun, wind and rain all remind him that he is a partner in the great drama of life planned by a wise Creator. Realizing that he passes this way but once he will wish to live his life unselfishly and well.

WHY SOME FARMERS FAIL

While agriculture has its rewards both financial and spiritual, it is a difficult occupation to follow and many farmers fail. The incidence of failure in recent years has led us to make a study in Broach District, with a view to learning the cause of failure as far as possible. Of course it is improbable that failure would be due to any one cause alone. Usually it comes as a result of several factors working to a man's disadvantage at the same time. It is difficult to separate any one cause from the others, yet the apparent reasons for failure, learned through observation and conversation, are given here with the hope that this may be of some help.

1. *Lack of Training*

All the men interviewed had practical experience in farming but none had received special training through private reading, institutes or classes that would help them to improve their farming methods. Only four of the men had studied in school, one through the fifth standard and the remainder to the third standard. This would seem to account in part for the lack of business acumen noted so often. One illiterate farmer had acquired fifteen acres of land during the prosperous years of 1918-26. Then came the lean years of 1931-6 and he began to borrow small sums of money for taxes and household expense. Asked if he kept any account of his transactions he replied, 'The money came and it all went, what need is there to keep account of it?' Inquiry showed that he could not have borrowed more than Rs. 120 per year during the four years. Yet, he was surprised when his creditor presented an account that took his land in payment.

Almost illiterate, the men relied entirely on tradition for guidance and few seemed to regard agriculture as an occupation that could be materially improved by their own efforts. There are numerous examples of untrained men who are good cultivators although from the experience of these men it seems that some suitable training would be a great asset.

2. *Poor Health*

We are surprised to learn of the distress caused and the time and energy consumed owing to sickness, a great part of which is preventable. Having no medical aid available it is the common practice to just allow attacks of dysentery and malaria to run their courses. In one home three out of five members were ill with dysentery at the time of our visit. During the six months prior to our visit one or more members of the family had been disabled in one way or another all the time. Illness casts a heavy economic burden upon the poor people especially.

3. *Poor Soil*

Observation in all cases would prove that a soil rich in humus is not only a fertile soil, but a reliable and safe soil. The land in four-fifths of the cases studied would be considered poor and infertile. Consequently these men often had crops fail while those on good land had fair crops.

4. *Litigation*

While we found no example of extreme litigation among the cases mentioned here, a reliable authority points out that homes and land are often lost for this reason. The interest on borrowed money, the loss of

time and expense in frequent trips to court are a burden that the average farmer cannot afford.

5. *Failure to Invest Capital Wisely*

Cases of under and over-borrowing were about equally distributed. Some could not get sufficient capital for necessary equipment, while others borrowed too much and were ruined by high interest. Thirty-two had borrowed money with interest as high as 18 per cent or more. Two had tried to pay interest at 40 per cent while one man had taken a loan at 75 per cent.

6. *Poor Marketing Facilities*

This applies especially to the small farmer who has no cart and only a small amount of produce to sell. Two men were carrying cotton on their heads to the warehouse of their lender and selling it for Rs. 2-8 per maund when the market price was Rs. 4-10 per maund. Much grain is still traded for merchandise, the price allowed being far below the market price. In more than half the cases the crops were turned over to moneylenders who alone determined the price paid for them.

7. *Poor Seasons*

Too much or too little rain and frost have often caused failure. Poor soil and lack of equipment tend to thrust the full effects of an unfavourable season upon the cultivators who are already in distress. While men in a more secure position could withstand the difficult years of 1929-36 the men we interviewed had lost all or a large part of their land. One-fourth had lost both land and equipment through one or more of the reasons noted above.

LAND, LABOUR AND EQUIPMENT

Success in farming depends much upon using land, equipment and labour in the right proportion. Often land and labour are wasted because of inadequate equipment. Again, if strong oxen and improved farm tools are to be used to advantage, there must be sufficient land and a competent operator. So the question arises, 'How much land, how much equipment and how much labour?' There can be no one answer to this as the circumstances vary greatly within the same village. However, a study of the relation between land, labour and equipment on several selected farms will be helpful.

Two brothers give their full time to cultivating twenty-two acres of land on shares. The land¹ is valued at Rs. 130 per acre or a total of Rs. 2,860. The following is a list² of the equipment they use :

| | Rs. | as. | ps. |
|------------------------------------|-----|-----|-----|
| two oxen @ Rs. 35 each approximate | 70 | 0 | 0 |
| one wooden plough (badly worn) . . | 2 | 8 | 0 |
| two old cultivator blocks . . | 2 | 4 | 0 |
| one yoke | 0 | 12 | 0 |
| ropes, lines, hand tools | 2 | 8 | 0 |
| Total Rs. | 78 | 0 | 0 |

A common practice is to attempt cultivation without suitable equipment. In this case there are oxen worth seventy rupees and tools worth eight rupees, for the use of two men cultivating land worth Rs. 2,860. It is needless to say that with such poor equipment their field work was heavy and irksome. It was, naturally, poorly done and the crops were inferior. Wanting a cart the men could haul no manure to the fields.

¹ See general note on prices today.

² Ibid.

The small amount of produce grown was carried home on the heads of labourers when a cart could not be borrowed. The poverty of the two brothers was matched only by that of those who laboured in their fields for three annas per day.

Another farm presents a more hopeful illustration. One of India's 'born farmers' cultivates twenty-five acres of land, about half of which is owned and the other half rented for cash. The value¹ of all the land cultivated is Rs. 3,750. Being energetic and competent he strives to improve all the land from year to year. Because of his concern he enjoys a cordial relationship with his landlord who gives him the land on a long term lease. One labourer is hired for six months each year. The remaining work is done by the cultivator and other members of his family. The following is an inventory² of the livestock and equipment used on the farm:

| | | | | Rs. | as. | ps. |
|---------------------------------------|----|----|----|-----|-----|-----|
| a yoke of oxen | .. | .. | .. | 150 | 0 | 0 |
| 2 covers for oxen | | .. | .. | 3 | 0 | 0 |
| a cart (long used but in good repair) | | | | 40 | 0 | 0 |
| 2 wooden ploughs | .. | .. | .. | 8 | 0 | 0 |
| 2 „ cultivators | .. | .. | .. | 8 | 0 | 0 |
| 3 yokes | .. | .. | .. | 3 | 0 | 0 |
| a seeder | .. | .. | .. | 3 | 8 | 0 |
| canvas, bags, ropes, etc. | | .. | .. | 15 | 0 | 0 |
| hand tools | .. | .. | .. | 25 | 0 | 0 |
| two female buffaloes @ Rs. 60 each | | | | 120 | 0 | 0 |
| three female calves @ Rs. 25 „ | | | | 75 | 0 | 0 |
| Total Rs. | | | | 450 | 8 | 0 |

¹ See general note on prices today.

² Ibid.

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This cultivator kept some rough notes and records so we were able to estimate his approximate farm income and expense¹ which worked out as follows:

| <i>Crops and Produce</i> | | | <i>Value</i> | | |
|--|----|----|--------------|-----|-----|
| | | | Rs. | as. | ps. |
| 150 maunds cotton | .. | .. | 540 | 0 | 0 |
| 190 maunds juar | .. | .. | 285 | 0 | 0 |
| 70 maunds millet, tul, and tuer | .. | .. | 130 | 0 | 0 |
| value of field crops | .. | .. | 955 | 0 | 0 |
| income from milk and ghee | .. | .. | 148 | 0 | 0 |
| increase in value of 3 calves | .. | .. | 24 | 0 | 0 |
| Total income | | | Rs. 1,127 | 0 | 0 |
| <i>Farm expense (estimated from notes)</i> | | | | | |
| | | | Rs. | as. | ps. |
| tax on land | .. | .. | 48 | 0 | 0 |
| rent of additional land | .. | .. | 145 | 0 | 0 |
| feed purchased | .. | .. | 105 | 0 | 0 |
| labour hired | .. | .. | 112 | 0 | 0 |
| repairs and small supplies | .. | .. | 42 | 0 | 0 |
| seeds and manure purchased | .. | .. | 24 | 0 | 0 |
| | | | Rs. 476 | 0 | 0 |
| interest on investments in land | | | | | |
| and equipment | .. | .. | 201 | 0 | 0 |
| depreciation on oxen, buffaloes | .. | .. | 42 | 0 | 0 |
| household expense for milk, | | | | | |
| fuel, vegetables, etc. | .. | .. | 82 | 0 | 0 |
| Total expenditure | | | 801 | 0 | 0 |
| ∴ Total net income | | | Rs. 326 | 0 | 0 |

¹ See general note on prices today.

As the land in both cases was of similar quality the difference in the degree of success must be explained largely by the difference in the use of labour and equipment. In the first case two men were trying to earn a livelihood with Rs. 8 worth of tools and a yoke of puny oxen. In the second case oxen and tools worth several times as much were efficiently used by one man. The buffaloes added substantially to the income, and increased the amount of manure available for use on the fields.

We still have to answer the question as to the amount of equipment that is desirable. The following list is suggested after a study of farms in several districts. As a standard we have kept in mind the equipment¹ needed on a 'family farm' of twenty acres where cotton, cereal grains and legume crops are grown.

| | | | | Rs. | as. | ps. |
|-------------------------------|----|----|----|---------|-----|-----|
| a yoke of oxen | .. | .. | .. | 150 | 0 | 0 |
| an iron plough | .. | .. | .. | 20 | 0 | 0 |
| a wooden plough | .. | .. | .. | 6 | 0 | 0 |
| 2 wooden cultivators | .. | .. | .. | 10 | 0 | 0 |
| an improved cultivator | .. | .. | .. | 20 | 0 | 0 |
| one leveller | .. | .. | .. | 4 | 0 | 0 |
| one seed drill | .. | .. | .. | 4 | 0 | 0 |
| a cart | .. | .. | .. | 70 | 0 | 0 |
| canvas, covers, ropes, etc. | .. | .. | .. | 20 | 0 | 0 |
| hand tools of good quality | .. | .. | .. | 25 | 0 | 0 |
| cost of equipment | | | | Rs. 329 | 0 | 0 |
| 2 pure-bred cows | .. | .. | .. | 100 | 0 | 0 |
| 4 „ calves | .. | .. | .. | 80 | 0 | 0 |
| 8 pure-bred fowls (hens only) | .. | .. | .. | 24 | 0 | 0 |
| Total | | | | Rs. 533 | 0 | 0 |

¹ See general note on prices today.

For the average cultivator, good pure-bred cows are generally preferable to buffaloes. The milk of cows is superior to that of buffaloes and their calves are more valuable. It would be hard to justify our present system by which we feed female buffaloes only and neglect the males; and feed bullocks while we starve the cows.

The amount of equipment suggested above is about fifty per cent more than we find on the average farm where two oxen are used. Some will hesitate because of the additional expenditure, but such expense for necessary tools and good livestock is to the cultivator's benefit. With sufficient tools a man can do his work easily and well. Hand tools for field and garden should be well formed and have blades of steel. The handles should be shaped so as to fit the hand, otherwise the workers will tire easily. Human labour is valuable and the wise farmer gives much attention to saving time and energy. Work done with poor tools is costly and it is often improperly done.

CO-OPERATION IN THE PURCHASE AND USE OF FARM IMPLEMENTS

There are several larger farm implements¹ which are often essential, yet they are too costly for one man to purchase. Several of these are noted below:

| | | | |
|--|---------|-----|-----|
| a disk harrow, for crushing and cutting hemp stalks, approximate cost | .. | Rs. | 120 |
| a soil ridger (to prepare land for soil in wet areas) | | .. | 36 |
| a fodder cutter (for cutting grass and fodder) | | .. | 35 |

¹ See general note on prices today.

As such tools are needed for only a few days each year it is often possible for several men to own them co-operatively.

THE CARE OF FARM TOOLS

Usually tools depreciate more rapidly when idle than in use. The iron plough will last for at least twenty years but if left lying about on the ground without oil and paint, it may become unfit for use in a short time. Red lead paint, grease and coal tar should be used freely on tools. They are all cheap and if used on wooden and iron tools they will improve their appearance and preserve them for many years. Carts should be well painted, otherwise moisture enters at the joints during monsoon. This expands the wood. After monsoon the moisture evaporates, the wood shrinks as it dries and the joints become loose. If cart wheels are properly painted or coated with coal tar and the tyres kept in place, they will last 10 years or more. The same is true of yokes, wooden cultivator blocks and ploughs. When not in use the blades of all tools must be covered with castor oil or grease. This will prevent rust and keep them smooth, clean, and ready for use when desired. The mould-board of the iron plough must always be oiled when not in use, otherwise one or two days will be required to remove the rust and permit of its working smoothly. All iron parts of implements should be coated regularly with red lead paint.

FARM ACCOUNTS AND RECORDS

Careful accounting is the first step to successful farm management. The keeping of accounts shows that a farmer is using both common sense and business methods

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in his work. By this means only, will he be able to determine where undue expense and loss have occurred and where profits have been made. Even an illiterate farmer must maintain at least a simple statement of his farm income and expenses during the year. In addition to this, accounts of the various field crops should be kept where possible. Such accounts are simple to keep and at the end of a year they will reveal useful information.

A simple form of keeping accounts is given here.¹

INCOME

| Date | ITEMS | Rs. as. ps. |
|---------|-----------------------------------|-------------|
| 1937 | | |
| 2 July | Sold 20 lb. juar seed to_____ ... | 1 4 0 |
| 10 July | Two days' hire of oxen_____ ... | 3 0 0 |
| 8 Sept. | Sold 10 maunds juar to_____ ... | 11 4 0 |
| 2 Oct. | Sold 3 pounds ghee to_____ ... | 2 4 0 |
| 4 Nov. | Sold 30 maunds rice to_____ ... | 40 0 0 |
| 1938 | | |
| 10 Feb. | Sold 120 maunds juar to_____ ... | 132 8 0 |
| 4 April | Sold 60 maunds cotton to_____ ... | 300 0 0 |

EXPENDITURE

| Date | ITEMS | Rs. as. ps. |
|----------|--------------------------------------|-------------|
| 1937 | | |
| 1 June | Labour for two days, planting cotton | 1 0 0 |
| 2 June | For 4 cartloads manure ... | 3 12 0 |
| 30 June | To—— for June wage ... | 15 0 0 |
| 4 July | Two maunds oilcake ... | 4 0 0 |
| | For grinding 10 maunds juar ... | 1 4 0 |
| 5 July | For sharpening 8 sickles ... | 0 8 0 |
| 15 Nov. | Rent for field ... | 70 0 0 |
| 1938 | | |
| 30 April | Taxes on field for 1937-38 ... | 62 0 0 |

¹ See general note on prices today.

The above is only suggestive of the form in which entries may be made.

In addition to this the careful farmer will keep separate accounts for fowls, milk, cows or buffaloes.

THE SELLING OF FARM PRODUCE

A farmer's work consists in not only producing plants and animals for he must sell his produce to proper advantage. Our study of life on many farms has shown that less than half the cultivators have access to a suitable market. Because of debts they are forced to deliver produce over to the moneylender who has much liberty in fixing the sale price. A common practice is for the lender to send his own man and cart to the threshing floor. As a result the small cultivator often receives less for his produce than if he were free to sell it in a public market. On this point the Royal Agricultural Commission observed that 'It has, we think, been established that, where the cultivator is in a position to dispose of his produce in a market, however limited its scope and badly organized its character, he obtains a much better price for it, even when the cost of transport is taken into consideration, than when he disposes of it in his own village.'¹

In the sale of products attention should be given to grading and quality. A man having a cartload of mangoes can better sell them if they are sorted and graded according to size and colour. When a man is free to find his own market, clean grain will sell for a better price than grain mixed with small stones and other waste material. The ghee which is offered for sale is often rancid and sometimes adulterated, and conse-

¹ Report of the Royal Commission on Agriculture in India, p. 388.

quently the price is low. Many people prefer to use coconut oil or imported ghee which are of known quality. In several towns people are willingly paying 20 to 25 per cent more for clean, pure milk which is delivered in bottles. Perhaps the greatest loss to village people results from the handling of eggs. Usually stale and often dirty, the price in bazaars is naturally low. It is possible to find people who will gladly pay 25 to 40 per cent more if they are sure of fresh, clean eggs.

In the sale of produce it is well to remember that good quality, service and business-like methods will be rewarded. As the village cultivators are so numerous and widely scattered over the country-side it is essential that they cease competing with each other and pay more attention to co-operation for the sale of their produce.

SECURITY LIES IN DIVERSIFIED FARMING

The man who grows several kinds of crops which ripen at different seasons and also keeps some productive livestock is usually the most successful farmer. In some places it is customary to grow only cotton or perhaps cotton for two years then grain for one year. For a man who has plenty of land and who prefers leisure to security such a plan will do but he whose land is limited will best succeed if he grows a variety of crops during different seasons, as far as possible. In this way he can use his land more intensively and protect himself against frost or insufficient rain. In 1928 men who had depended on cotton alone suffered almost complete loss, whereas those who had planted wheat, rice, legumes and monsoon jûar in addition, had crops left after the cotton was destroyed by frost.

FARMING AS AN OCCUPATION

From the standpoint of management it is best to plant crops so as to distribute both labour and income as evenly throughout the year as possible. A cultivator can then use his time, oxen and equipment more economically. The following proportion of crops is recommended with necessary variation for differing soil conditions. One-third of the land may be devoted to cotton or some cash-producing crop, one-third to cereal grains for both family use and for sale and one-third to legumes and fodder crops. By planting such crops a farmer can maintain his livestock at a low cost and improve his soil from year to year. Cotton draws its food from the depth of the soil while cereal grains draw their food from the top layer. Legume plants add valuable nitrogen to the soil and every farmer should grow them on at least 20 to 25 per cent of his land. By following such a plan the fertility of the soil improves and yields are increased from year to year. There is a strong temptation to grow cotton and other crops that can be sold readily for cash, but he who grows legumes and fodder crops and keeps several good milk cattle will gain in the end.

FARMING AS AN OCCUPATION

One of the first questions that arise is, 'What can a young man earn if he takes up farming?' Having no records of experience available it is hard to give a reliable answer. As a means for exploring the possibilities of agriculture as an occupation, two young men, having passed the agricultural middle school final examination from the Vocational Training School rented seven and three-fifth acres of land to farm on their own responsibility. Having had experience in improved

agriculture, both theoretical and practical, they were eager to put into practice some of the things they had learned.

Possessing no capital to start with, it was necessary to rent tools and oxen by the day and pay for them at harvest time. Field crops grown on the seven and three-fifth acres were cotton and kaffir corn. They also rented a plot of land for an irrigated garden. As they kept a record of income and expense we are able to show the financial result for their first year. Rainfall was deficient and crops were poor on many adjoining fields but due to having good soil and cultivating it well their income was satisfactory.

STATEMENT OF INCOME AND EXPENDITURE¹:

| COTTON | | | | |
|---|----|-----|-----|-----|
| <i>Income</i> | | Rs. | as. | ps. |
| 56 maunds 27 pounds | | 266 | 9 | 0 |
| (Prices from Rs. 4-8 to 5-2 per maund.) | | | | |
| <i>Expenditure</i> | | Rs. | as. | ps. |
| rent for 5 acres @ Rs. 12 per | | | | |
| acre | 60 | 0 | 0 | |
| 2 maunds seed for 5 acres | | | | |
| @ Re. 1-4 | 2 | 8 | 0 | |
| hire of oxen, 24 $\frac{1}{4}$ days @ | | | | |
| Re. 1-8 per day | 36 | 6 | 0 | |
| hired labour | 12 | 11 | 6 | |
| cloth for picking cotton | 1 | 10 | 0 | |
| municipal tax | 0 | 8 | 0 | |
| | | | | |
| | | 113 | 11 | 6 |
| Net proceeds Rs. | | 152 | 13 | 6 |

¹ See general note on prices today.

FARMING AS AN OCCUPATION

JUAR

| <i>Income</i> | | Rs. | as. | ps. |
|---|-----|-----|-----|---------|
| 62 maunds | 104 | 10 | 0 | |
| 1400 bundles fodder .. | 38 | 8 | 0 | |
| | | | | 143 2 0 |
| <i>Expenditure</i> | | Rs. | as. | ps. |
| land rent, 2½ acres @ Rs. 12. | 30 | 0 | 0 | |
| seeds, 20 pounds @ 3 pice | 0 | 15 | 0 | |
| hire of oxen, 17 days @ Re. 1-8 per day .. | 25 | 8 | 0 | |
| hired labour .. | 14 | 0 | 0 | |
| | | | | 70 7 0 |
| Net proceeds Rs. | 72 | 11 | 0 | |

GARDEN

| <i>Income</i> | | Rs. | as. | ps. |
|--|-----|-----|-----|-------------|
| sale of produce from one-tenth acre | 14 | 0 | 6 | |
| <i>Expenditure</i> | | Rs. | as. | ps. |
| rent for one-tenth acre .. | 2 | 0 | 0 | |
| seeds | 0 | 13 | 6 | |
| plants purchased | 0 | 14 | 0 | |
| hire of oxen for irrigation .. | 2 | 0 | 0 | |
| | | | | 5 11 6 |
| Net proceeds Rs. | 8 | 5 | 0 | |
| | | | | Rs. as. ps. |
| Total Income from seven and three-fifth acres | 423 | 11 | 6 | |
| Total Expenditure | 189 | 14 | 0 | |
| Net Income Rs. | 233 | 13 | 6 | |

To care for seven and three-fifth acres of land required about two-fifths of the time of the two young

agriculture, both theoretical and practical, they were eager to put into practice some of the things they had learned.

Possessing no capital to start with, it was necessary to rent tools and oxen by the day and pay for them at harvest time. Field crops grown on the seven and three-fifth acres were cotton and kaffir corn. They also rented a plot of land for an irrigated garden. As they kept a record of income and expense we are able to show the financial result for their first year. Rainfall was deficient and crops were poor on many adjoining fields but due to having good soil and cultivating it well their income was satisfactory.

STATEMENT OF INCOME AND EXPENDITURE¹:

| COTTON | | | |
|---|-----|-----|---------|
| <i>Income</i> | | Rs. | as. ps. |
| 56 maunds 27 pounds | 266 | 9 | 0 |
| (Prices from Rs. 4-8 to 5-2 per maund.) | | | |
| <i>Expenditure</i> | | Rs. | as. ps. |
| rent for 5 acres @ Rs. 12 per | | | |
| acre | 60 | 0 | 0 |
| 2 maunds seed for 5 acres | | | |
| @ Re. 1-4 | 2 | 8 | 0 |
| hire of oxen, 24 $\frac{1}{4}$ days @ | | | |
| Re. 1-8 per day | 36 | 6 | 0 |
| hired labour | 12 | 11 | 6 |
| cloth for picking cotton .. | 1 | 10 | 0 |
| municipal tax | 0 | 8 | 0 |
| | | | |
| | 113 | 11 | 6 |
| Net proceeds Rs. | 152 | 13 | 6 |

¹ See general note on prices today.

FARMING AS AN OCCUPATION

JUAR

| <i>Income</i> | | Rs. | as. | ps. |
|------------------------|----|-----|-----|----------------|
| 62 maunds | .. | 104 | 10 | 0 |
| 1400 bundles fodder .. | .. | 38 | 8 | 0 |
| | | | | <u>143 2 0</u> |

| <i>Expenditure</i> | | Rs. | as. | ps. |
|---|----|-----|-----|---------------|
| land rent, $2\frac{1}{2}$ acres @ Rs. 12. | | 30 | 0 | 0 |
| seeds, 20 pounds @ 3 pice | | 0 | 15 | 0 |
| hire of oxen, 17 days @ | | | | |
| Re. 1-8 per day .. | .. | 25 | 8 | 0 |
| hired labour .. | .. | 14 | 0 | 0 |
| | | | | <u>70 7 0</u> |
| Net proceeds Rs. | | 72 | 11 | 0 |

GARDEN

| <i>Income</i> | | Rs. | as. | ps. |
|-------------------------------------|----|-----|-----|---------------|
| sale of produce from one-tenth acre | | 14 | 0 | 6 |
| <i>Expenditure</i> | | Rs. | as. | ps. |
| rent for one-tenth acre .. | .. | 2 | 0 | 0 |
| seeds | .. | 0 | 13 | 6 |
| plants purchased .. | .. | 0 | 14 | 0 |
| hire of oxen for irrigation .. | .. | 2 | 0 | 0 |
| | | | | <u>5 11 6</u> |
| Net proceeds Rs. | | 8 | 5 | 0 |

| | | Rs. | as. | ps. |
|---|----|-----|-----|-----|
| Total Income from seven and three-fifth | | | | |
| acres | .. | 423 | 11 | 6 |
| Total Expenditure .. | .. | 189 | 14 | 0 |
| Net Income Rs. | | 233 | 13 | 6 |

To care for seven and three-fifth acres of land required about two-fifths of the time of the two young

men from 1 June to 15 April. They were able to work for others during their spare time and in this way earned money for their current expense.

It would seem that this amount of land (seven and three-fifth acres) farmed *intensively* may be sufficient to support an average family, provided some *good livestock* and improved fowls are kept to provide spare time employment and additional income.

A young man of good character with suitable education, initiative and a love for nature can find profitable and genial employment in agriculture. Seasons are sometimes irregular and the work is often exacting and difficult, yet a young man of industry and intelligence can earn a satisfactory living for himself and family and enjoy some privileges which he would not have in the city. We may anticipate improvements in the science and technology of agriculture during the next twenty-five years. The control of plant diseases, more productive varieties of plants and animals and improved implements will help to make the cultivator's income far more secure than it is today.

As young men and women having a vision of rural life at its best take up agriculture we may expect to see in villages some of the conveniences now found only in cities. Improved roads, good schools, dispensaries, libraries, a reasonable amount of leisure are all within the rightful heritage of village people. If a number of the most capable young men and women will cease to crowd upon the few poorly paid posts in the city and lend their hearts and hands to the improvement of agriculture and village life they will be assured of a comfortable living and with it a measure of security and culture.

POPULATION AND LAND

LAND is the basis of life. One of the chief problems of village reconstruction in India is to use the available land properly and distribute its income equitably. Land supplies the only real economic security that we have. Whenever depression comes people begin to look toward the land. Every man likes to have at least a small plot that he can call his own. There he can build his home and live in security.

The Chinese people refer to land as 'the Good Earth'. To own some land and enjoy the security that it brings is one of the chief desires of a Chinaman's life. In India unfortunately, land is not regarded with such reverence, although there are many who refer to some ancestral holding as 'golden land'. One aged Muslim recently remarked as he viewed a prize field: 'Allah himself gave it to my ancestors. While I live it shall not be sold and its boundaries shall not be changed.'

It seems ironical however, that those who toil and till the soil often share least in its bounties. We commonly refer to the cotton prices as being too low because of surplus cotton. In one respect this is true. Perhaps the immediate goal should be restricted production and a fixed price. But as long as the toilers who produce the cotton stoop with their bare backs exposed to the scorching sun in summer and lie down on the bare earth to shiver through the night in winter, we cannot accept

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restricted production as a permanent policy. We have scarcely touched the problem of land utilization and prices for farm produce as yet. To provide just one extra garment each for those who are almost unclothed, and even one sheet for each to use at night would cause a tremendous cotton shortage. For the scope of this chapter it is sufficient to observe that land is the basis of all life and it comes to us as a sacred trust, the gift of a kindly Providence. To use it wisely and apportion its income fairly is one of the foremost problems in village improvement.

LAND AND INCREASING POPULATION

The number of people who live by tilling the soil increases from year to year.¹

| <i>Year</i> | | | <i>Percentage of Population, dependent on Agriculture</i> |
|-------------|----|----|---|
| 1891 | .. | .. | 61 |
| 1901 | .. | . | 66 |
| 1921 | .. | .. | 72 |
| 1931 | .. | .. | 72 |

With primitive methods of tillage, the soil of India is expected to support a population that is steadily increasing. If we consider the density of population alone, India still stands in a favoured position beside some other countries.

| <i>Country</i> | | | <i>Density of Population per square mile</i> |
|----------------|----|----|--|
| England | .. | .. | 485 |
| Belgium | .. | .. | 654 |
| Italy | .. | .. | 313 |

¹ P. K. Wariar, *The Population Problem in India*, p. 146.

AREA UNDER CERTAIN MAJOR CROPS
in 1,000 Acres (British India)

| CROP | 1931-32 | 1932-33 | 1933-34 | 1934-35 | 1935-36 | 1936-37 | 1937-38 | 1938-39 | 1939-40 | 1940-41 |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rice | 68,745 | 67,241 | 67,504 | 66,832 | 67,386 | 69,044 | 69,455 | 69,918 | 70,101 | 68,849 |
| Wheat | 25,279 | 24,061 | 27,556 | 25,608 | 25,088 | 25,189 | 26,633 | 26,781 | 26,128 | 26,446 |
| Sesamum | 2,384 | 2,627 | 2,577 | 1,954 | 2,144 | 2,288 | 2,438 | 2,421 | 2,108 | 2,216 |
| Cotton (Bales of 400 lbs.) | 14,258 | 12,790 | 14,054 | 14,028 | 15,242 | 14,839 | 15,359 | 13,887 | 13,344 | 14,083 |

There has been no increase in acreage of the major crops since 1931 to compare with the marked increase in population. Nor has there been any notable increase in the total yield of these crops. The accompanying table shows that per acre yields in India are low, when compared with certain other countries. India's hope for increasing her food supply lies in exploring all possible steps for increasing per acre output of major crops.

TOTAL YIELD OF CERTAIN MAJOR CROPS
(British India)

| CROP | 1931-32 | 1932-33 | 1933-34 | 1934-35 | 1935-36 | 1936-37 | 1937-38 | 1938-39 | 1939-40 | 1940-41 |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Rice (tons) | 26 201 | 25,730 | 25,719 | 23,209 | 27,824 | 26,699 | 23,969 | 25,364 | 25,734 | 22,191 |
| Wheat (tons) | 9,455 | 9,370 | 9,729 | 9,434 | 9,752 | 10,764 | 9,963 | 10,752 | 10,767 | 10,005 |
| Sesamum (tons) | 486 | 474 | 352 | 413 | 439 | 465 | 396 | 416 | 415 | 433 |
| Cotton (Bales of 400 lbs.) | 4,618 | 5,057 | 4,797 | 5,867 | 6,234 | 5,722 | 5,051 | 4,909 | 4,909 | 5,903 |

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| <i>Country</i> | | | <i>Density of population per square mile</i> |
|------------------|----|----|--|
| Denmark | .. | .. | 194 |
| India | .. | .. | 177 |
| <i>Provinces</i> | | | |
| Bombay | .. | .. | 143 |
| Bengal | .. | .. | 579 |
| United Provinces | .. | .. | 414 |
| Punjab | .. | .. | 184 |

The census figures reveal the rapid growth of India's population. A striking feature however, is that up to 1921 the increase showed little or no regularity. The rate of increase reached a new high level at the 1941 census period.

| <i>Year</i> | <i>Population (Not including Burma)</i> | <i>Percentage Increase</i> |
|-------------|---|----------------------------|
| 1941 | 388,988,000 | 15.0 |
| 1931 | 338,171,000 | 10.6 |
| 1921 | 305,730,000 | 0.9 |
| 1911 | 303,041,000 | 6.1 |
| 1901 | 283,870,000 | 0.9 |
| 1891 | 279,593,000 | 9.5 |
| 1881 | 250,160,000 | 1.4 |
| 1872 | 203,415,000 | - - - |

Famines and epidemics have had much to do with India's population trend. The more regular increase in population since 1921 may be explained in a large measure by both the development of medicine and health services and some improvements in agricultural production.

But numbers do not tell the full story. The number

of people per square mile to be supported at a given standard will not depend on the land surface alone. Some other factors are of more significance than the area of land:

1. *Climate*

Rainfall and temperature must be favourable to plant growth. Five hundred people per square mile in a fertile valley may be in a better social and economic condition than thirty per square mile on an arid plateau.

2. *Fertility of the Soil*

A depleted soil can be improved but it is difficult to enrich a soil that is by nature infertile and unsuited to agriculture. The fertile soil of the Ganges valley and the black cotton soil of Gujarat if well tilled can provide a comfortable living for a large population. These soils being naturally fertile, can be further improved by reasonable expense and effort.

3. *Natural Resources*

Forests, minerals and a tendency of the people toward industry and the use of natural resources may explain the denser population of some countries.

4. *Standard of Living*

Where people require education, art, flowers, roads, hospitals, and many of the amenities of civilization the soil will support a smaller number than if a lower standard of living is accepted.

The extension of industry and cottage vocations are usually suggested as the remedy for removing surplus population from the land. Many factories and mills have been opened during the past thirty-five

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years. There has been much emphasis on the need for re-establishing cottage vocations. This would suggest that many of the surplus labourers are gradually being diverted from the land to industry. When we refer to the census figures for the past thirty years we are disappointed.¹ The actual number employed in some industries increases from year to year but the percentage of the whole population employed in industry decreases steadily.

| <i>Date of Census</i> | | <i>Percentage of Population Sustained by Industry</i> | | |
|-----------------------|----|---|----|------|
| 1901 | .. | .. | .. | 15.5 |
| 1911 | .. | .. | .. | 11.1 |
| 1921 | .. | .. | .. | 10.3 |
| 1931 | .. | .. | .. | 9.7 |

The reason for this is that India, once a country of small handicrafts is now becoming industrialized and mechanized at the same time. Even though the numbers of factories and mills increase, the percentage of population employed therein grows less each year. Until recently cartmen in the Broach area hauled lint cotton from village gins to the central gin for pressing. Now a motor truck does the work of sixteen or more cartmen with their oxen. The day of a mechanical purveyor for handling seed cotton is near and we may anticipate that even though production of cotton may increase, the country gins will tend to employ fewer labourers. We can see how the percentage of people depending on agriculture has been steadily in-

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creasing, from 61 per cent in 1891 to 72 per cent in 1931.

In a new country it is possible to bring more land under cultivation. In India nearly all the arable land is under cultivation. While surveys show much waste land, little of this can be farmed profitably. In the Bombay Presidency 86 per cent of all cultivable land is now in use and we may assume that the remaining land is for the most part either marginal or unfit for cultivation.¹ Apart from increased irrigation we must rely on a more intensive use of land as a means for supporting an increasing population.

How much Land per Family?

Efforts have been made to determine the extent of land necessary to support a cultivator and his family. Estimates range from three to fifty acres. No estimate can be entirely reliable unless we consider soil fertility, the size of the family concerned, prices for farm produce and the standard of life to be maintained. The following table shows the amount of land per cultivator in the various provinces, according to the census of 1921.²

| | Acres |
|-------------------|-------|
| Bombay | 12.2 |
| Punjab | 9.2 |
| Central Provinces | 8.5 |
| Burma | 5.6 |
| Madras | 4.9 |
| Bengal | 3.1 |
| United Provinces | 2.5 |

¹ Report of the Royal Commission on Agriculture in India, p. 133.
² *ibid.*

In Denmark much has been done toward the development of 'family farms'. Careful studies were made as to the fertility of the average land and the amount needed by the average family. On the basis of this information the rates of tax have been so adjusted as to discourage large holdings. The rate of tax for those holding above 25 acres increases in proportion to the size. Due to the enhanced rate of taxation there are few holdings above fifty acres. As a general average for the country at large the maximum holding is considered to be about twenty-five acres.

Obviously the amount of land per cultivator in India will be much less. A cultivator should have enough land to provide profitable employment for himself, the members of his family and at least one yoke of oxen throughout the year. The income of the land should be sufficient to provide not only the necessary food and clothing for his family but allow also for health and cultural needs. From the above table it is apparent that nearly 40 per cent of the cultivators are forced to farm holdings that are too small. Farmers in the juar-cotton area of Gujarat suggest fifteen acres as a minimum amount of land to support a family. They often have in mind the extensive and rather careless methods of cultivation which are still common. With more careful and intensive tillage a smaller area of land may yield much at less expense. The total amount of land cannot be increased, but through intensive cultivation small holdings will employ more people and the yields in many cases can be greatly increased.

ful tillage and the liberal use of green manure during a period of ten years the yield per acre has been increased to about 1,440 pounds of juar and 940 pounds of cotton. By increasing the fertility of the field its capacity has been doubled. Two men can be employed profitably where only one found employment before.¹ The improvement was made by using the ordinary farm implements and the wages of added labour and the costs of improvement were dependent upon and met by the increased yield each year. The improvement of land is equivalent to increasing its area. We cannot assume that the land may support an unlimited increase in population, but, through proper use and improvement, those who now till the soil can be more profitably employed and the whole standard of rural life raised.

Land Tenure

To understand the problems of agriculture and village life we must know something about land ownership and tenure. By tenure we mean the relationship between a land-holder and the Government.

From earliest times the control of land has been vested in the Government. In the times of the Old Testament the Egyptian kings administered the land and took a part of its produce.² In the books of Manu, frequent reference is made to the 'king's share'. During the seventeenth century it was common for waning kings to develop clever and ingenious ways of collecting revenue on an increasing scale. It was customary to keep the collections at a point where the peasants could carry on and not give up and flee to the jungle.

¹ Vocational Training School, *Farm Project Records*, 1926-37.

² See *The Holy Bible*, Genesis Chapter XLVII, verses 20-26.

To administer land and collect its revenue wisely has always been one of the marks of good government.

There are two general systems or classes of land tenure in India: (1) The Ryotwari system and (2) the Zamindari system. The Ryotwari system grants a title of ownership to the cultivator. His holding is the unit for Government assessment. He is free to transfer his land at will and in the payment of revenue he deals directly with Government. This system is most common in the Bombay Presidency. In the Zamindari system the village is used as the unit of assessment and the right of ownership rests in the landlord or zamindar. He collects the annual assessments from the cultivators and deals with Government.

Under the Ryotwari system each field is surveyed and numbered. The revenue is then assessed according to the size and fertility of each survey number. The holder of each number deals directly with Government. The first claim on the produce of the land is held by Government, and in case of failure to pay revenue the land may be sold by Government and the revenue collected. Fields called survey numbers are examined individually and the rate of revenue is fixed every thirty years. During the thirty-year interim there is no change in the rate of revenue or land tax, as it is commonly called.

Under this system a cultivator may construct wells, irrigation ditches, or farm buildings and make any improvement necessary for the cultivation of his land. He cannot divert any of the land to non-agricultural use without the permission of the District Collector and in this case he must pay an enhanced rate of assessment.

Methods of Acquiring Farm Land

The first question that comes to a young man who contemplates farming is, 'How can I get land?' Because of the capital and risks involved, and the scarcity of good land this is in many respects his most difficult problem. It is a characteristic of agriculture that a large area of land is required for plant growth. The shop-keeper can carry on a large business within a small space. The author knows a merchant who sells goods worth over Rs. 15,000 annually in a space measuring only 10'×20'. During a year a miller can grind 36,000 maunds of wheat into flour in a space as small as 20'×30'. To produce that quantity of wheat farmers would need at least 1,800 acres of land. How to procure adequate land is one of the farmer's greatest problems?

There are several methods by which a man may procure land for agriculture, namely inheritance, purchase, rent and new tenure.

(1) *Inheritance.* Much of the land in India passes from one to another through inheritance. Ancestral lands are usually carefully guarded and passed on to the rightful heirs. If a young man's parents own sufficient land he is fortunate. If not he must look elsewhere.

(2) *Purchase.* To purchase land it is usually essential to have a good part of the purchase price in ready cash. The remaining sum may be paid by instalments. The instalments must be easy and the rate of interest low, 6 per cent or under. Otherwise it will not be possible to make the payments. A young man possessing scientific training in agriculture and having character and credit can sometimes purchase land without much capital for down payment. The annual instal-

ments in this case must be spread out over a period of not less than twenty years and the rate of interest should not exceed 6 per cent. This will enable him to make the payments and hold the land even though several lean years should come. The necessity for a low rate of interest and for extending the payments over a long period is clear from the following illustration. A field of ten acres is purchased at Rs. 180 per acre. At the end of the first year the amount¹ to be paid will be as follows:

| <i>Expenditure</i> | Rs. as. ps. |
|------------------------------------|-------------|
| interest on Rs. 1,800 @ 6 per cent | 108 0 0 |
| tax on land | 40 0 0 |
| first of 20 equal instalments .. | 90 0 0 |
| Total Rs. | 238 0 0 |

A conservative estimate of the probable income is:

| | |
|---|-------------|
| 5 acres cotton yielding 12 maunds per acre @ Rs. 4-8 per maund .. | 270 0 0 |
| 5 acres juar yielding 24 maunds per acre @ Re. 1-8 per maund .. | 180 0 0 |
| Total Rs. | 450 0 0 |
| Less expenditure | 238 0 0 |
| Cultivator's margin of profit | Rs. 212 0 0 |

If a man is a good cultivator it is still possible to purchase land on reasonable terms.

From a practical standpoint the price of land is generally determined by its location, fertility and the prices of farm produce. A field located near a large village or town and by a good road usually commands a higher price than land farther away. As an investment such land may be desirable but the man who buys it purely

¹ See general note on prices today.

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for cultivation cannot afford the high prices usually asked. On the other hand, a field should be accessible at all seasons and not too far from the village in which the purchaser lives. Otherwise, much time will be wasted in travelling to and from it. Recently a man who had received a modest inheritance used it in purchasing a field nearly six miles from two small fields he already owned. It did not occur to him until after he had paid for the field that the distance of six miles made it almost impossible for him to cultivate it. It would have been better to pay a higher price for land nearer that which he already owns.

Fertility also is an important factor. How much will the land produce and what kind of crops can be grown? Exhausted land can be improved but land in which the soil is naturally poor should be purchased with great care. Often such land does not produce enough to pay the farmer for his expense in cultivating it. Some land is subject to flooding. Crops are frequently destroyed if there is a period of heavy rainfall. Other land is so located that the water quickly flows from it and unless the monsoon rain is well distributed the crops will fail.

The prices of farm produce regularly influence the prices of farm land. When there is a good market for grain and cotton, farmers are eager to sow more crops. They naturally vie with each other for land, and the price advances. In periods of depression and low prices, land values tend to decrease.

ADVANTAGES OF LAND OWNERSHIP

Perhaps the first advantage in owning land is the feeling of security that it gives to the owner. He has a

place that is his own. There is no landlord to fear. He can till his land and support his family in peace. With land ownership also comes social prestige. A man is no longer a tenant. He can take part in the social life and improvement of his village since he is likely to be a permanent resident. He has the privilege of voting and is regarded as a stable citizen by his neighbours. The economic advantages of land ownership can of course be overdrawn. In general, the man who owns the land he cultivates finds joy and pride in his work. He may use manure more freely, clean up hedge rows and level the fields, for the land is his own and he is sure that he will receive the reward for these improvements. On the other hand land ownership in a country where the pressure of population is great, invites much risk unless it is nearly free from mortgage. Several lean years or a depression may cause heavy loss. Again, unless land is purchased at a reasonable price it may not be any more profitable to cultivate than rented land. Mere land ownership is no assurance of economic prosperity. A careless farmer may be financially in the same position as the labourers who toil in his fields. Ownership however, should be the goal of every cultivator and a man who is a tenant today may well plan to purchase some land as soon as he can afford it.

(3) *Rent.* Men who own no land may acquire the use of suitable land through rent. There are two general methods for renting land. (1) Paying cash at a fixed rate per acre, and (2) sharing the crop.

Land rented for cash is usually taken on a one-year contract. Printed forms which protect the right of both owner and tenant can be purchased for a few pice each.

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The rate per acre is usually determined by the same factors that determine the selling price of land.

In general, people will pay rent for land only because it is scarce. In a new country where land is free, no one would pay rent. As population increases and there is need for more food some people will pay rent for the best land rather than cultivate inferior land. As an illustration, we may assume that there are five different qualities of land, as shown below¹. When all the

| Quality of Land | | Value of Produce per acre | Rent per acre |
|-----------------|-----|------------------------------|---------------|
| | | Rs. | Rs. |
| First | ... | 60 | 30 |
| Second | ... | 50 | 25 |
| Third | ... | 40 | 20 |
| Fourth | ... | 30 | 15 |
| Fifth | ... | 15 | 10 |

desirable land is taken, people will pay more or less rent for the remaining grades of land.

While these figures are only suggestive they show how the rates of rent vary for lands of different quality. They do not tell the full story as some farmers being more efficient than others will pay a higher rate than shown here for the first or second quality land and still earn some profit. Also due to the pressure of population on land men will as a last recourse pay more than an economic rate because they have to get it or starve. As the population increases the landlord's share in the produce of land tends to increase and the tenant's share tends to decrease. The provision of more capital at reduced rates of interest and a more efficient and educated

¹ See general note on prices today.

peasantry can help to remove the vicious circle that exists of rents increasing while holdings decrease in size from year to year.

There are several advantages in renting land for cash rather than for a share of the crop. The cultivator is free to sow, harvest and sell his crops as he pleases. He enjoys complete freedom since the land is his own for use during the year. If the tenant is industrious and a good manager he receives the full reward of his labour and management. In the case of share rental any increase in yield due to superior cultivation must be shared with the owner. Often a reliable tenant can in this way have access to better land than he could have by purchase. Sometimes it is cheaper and surely safer to rent good land than to attempt to purchase it without sufficient ready capital.

There are also some disadvantages in cash rental. Poor crops cast a heavy burden on the cash renter. He must pay the full amount even though flood, drought or frost destroy his crop. The capital risk therefore is great, and unless a tenant has good equipment and some little reserve for lean years he should think carefully before signing a rent contract. Unless he has an intelligent and reliable landlord there is a tendency to increase the rent from year to year leaving a decreasing share for the cultivator. Nevertheless farmers who can afford to take the risk usually prefer to rent land for cash. Some of the chief reasons suggested by cultivators themselves are shown below:

1. More profitable. A greater share of the crop remains for the cultivator.

2. Less interference by the landlord. A man can farm the land as he pleases.

3. The crop is one's own. He may sell it when and where he chooses.

4. If a farmer works hard and increases the yield he reaps the full benefit.

In the case of share renting there is usually no exchange of money but a fixed part of the crop is given to the landlord. This is usually one-half of all crops grown, including fodder, straw, hulls, cotton stalks etc. We found a few rare examples, where the cotton stalks and juar fodder were given to the tenant on condition that he use some manure on the soil. The landlord generally pays the tax although we found a number of cases where the tenant in addition to giving half of everything was required to pay half the tax as well. There were many cases of 'rack-renting'. Seed and supplies were furnished by the landlord and at harvest time he took possession of the crop, arranging settlement on his own terms. Several tenants complained that even though they preferred to carry their few maunds of cotton to the landlord's house they were required to use his cart for which there was an additional charge.

There are some clear advantages in share renting. If the crop fails or the price is low, both landlord and tenant share the loss equally. In this way a tenant can usually bear his own loss and enter the new year without the burden of unpaid rent, as would be the case where land is rented for cash. Again, if the landlord is a wise and sympathetic man he will see that the tenant's interest is his own. Liberal terms which will attract a good type of tenant are the most profitable for both. He will often supply manure on condition that the tenant furnishes the labour and cart for haulage.

Whether land is rented for cash or a share of the crop a wise tenant will give as much attention to the choice of a landlord as he will to the selection of land. It is often possible to find a landlord who has a private income and is willing to turn over his land to a reliable tenant for whatever it will bring him with the least trouble to himself. He looks for honesty and dependability in a tenant rather than for the last rupee that may be exacted as rent.

Young men about to take up farming frequently ask, 'How shall I get land, on a share basis or for cash?' To this question there is no definite answer. If a man has experience, initiative, adequate equipment and enough capital to protect himself in case of a crop failure, he will be likely to find cash renting the most desirable. If he lacks these resources it will probably be best for him to farm on the share basis, for a few years at least. It is well to remember that a labourer free from debt is often in a better economic position than a tenant indebted to a 'racking' landlord.

(4) *New Tenure*. There is still some Government land available to the backward classes on a new tenure basis. To obtain land on new tenure a man must pay an enhanced rate of assessment for a period of years after which the land becomes his own with certain restrictions. Such land must be cultivated by the holder and it cannot be transferred without the permission of the Government. The purpose of the new tenure act is to place surplus Government lands in the possession of poor people and protect it from being taken over by moneylenders in lieu of debts.

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LAND HOLDINGS

The ideal land holding is one that is sufficient for a family and a yoke of oxen. We have already seen that perhaps 50 per cent of the cultivators do not have access to sufficient land and the land that they do control is usually divided into numerous little patches often scattered on several sides of the village. It is sometimes located within the boundaries of another village.

Due to the application of the Indian law of inheritance, original survey numbers have been divided and sub-divided until we sometimes find pieces as small as one fortieth acre. In dividing property among heirs it is the custom to give each a proportionate share of every item. Thus a father in dividing his land among his sons will give to each a portion of each field.¹ Also, the lack of capital leads to the current tendency to cultivate in very small and uneconomical units. This continued division and sub-division of fields into many small and scattered tracts presents one of the most difficult problems of rural reconstruction. The plots are not only too small but they are irregular in shape. It rarely happens that a man has all his land in one place. Instead, he must drive his weary bullocks for many miles in order to visit all his plots. The average cultivator's opinion is, 'It is troublesome but what can we do?'

Opinions gleaned from 150 cultivators reveal the following as the most common defects in the system of scattered and sub-divided holdings.

1. It is wasteful. Much time and energy of both man and beast are wasted as they trudge wearily from one plot to another.

¹ *Report of the Royal Commission on Agriculture in India*, p. 134.

2. It is difficult and costly to guard crops, scattered over the country-side in little plots.

3. Farmers cannot keep adequate livestock on the land.

4. The maintenance of records and field boundaries are too costly.

5. As roads are insufficient there is a loss in time and crops in getting to and from the fields.

6. If land is in a single tract the farmer can build a fence, dig a well and improve it.

7. It is not practicable to use improved implements unless the fields are near to each other and of sufficient size.

8. Scattered holdings give rise to frequent quarrels over boundaries and crops destroyed by livestock.

9. With scattered holdings there is less of the community spirit. The owners live away in some village ward and their interests as cultivators and as village residents may be quite different.

It is difficult to suggest a remedy for this evil. In the Bombay Presidency a bill to prevent further subdivision was introduced into the Legislature in 1928. Due largely to misguided opposition this came to an end before it was put to the vote. It will always be difficult to deal with such a personal matter through legislation. In the Punjab notable progress has been made through Co-operative Societies for the Consolidation of Land Holdings. Through mutual exchange, sale and purchase, the land boundaries, according to this plan are so arranged that each family may have their land in one place. There is no compulsion, as the leaders of this work feel that friendly co-operation is the best method, even though more time may be required.

EDUCATION, CO-OPERATION AND THRIFT

CO-OPERATION is more than a scheme or a plan for rural improvement. It is a manner of life and its goal 'one for all and all for one' touches a great need, namely that of mutual self-help. Probably through mutual self-help more than in any other way can the present need for education, improved health, better homes and livestock be supplied. In their report, the Royal Commission on Agriculture in India seem to mention co-operation more frequently than any other topic, indicating their high esteem for it as a factor in education and village reconstruction.

With the passing of barter as a method of exchanging goods, the village people are placed at a disadvantage. The adroit merchants with whom farmers deal are usually organized and in disposing of a few maunds of produce or in making his simple purchases an individual cultivator has little or no bargaining power.

Formerly the social and economic needs of Denmark were similar to those in the villages of India today. In debt, yet needing schools, better homes, farm tools and medicines, the people turned to co-operation. Through mutual self-help they have been able to supply many of their needs and today they are in a strong social and economic position. Schools and hospitals are managed co-operatively so that even people in remote villages

may have access to them. Farm products are sold in London, Paris and other cities of the world through agents engaged by the rural people themselves.

THE VILLAGER AND THE MONEYLENDER

For centuries the moneylender has helped to supply the needs of the less prosperous people. Whether money be needed for tobacco, food, farm tools, a wedding or funeral, the lender usually supplies it, provided the borrower has some credit or assets. Sympathetic lenders have saved the lives of many during times of trouble and for this they deserve credit. However, the practice of private moneylending as often carried out, is subject to many abuses and it cannot in the long run be regarded as a satisfactory method for supplying the needs of village people. The following defects were noted most frequently during a recent study of seventy cases.

1. Money is often loaned for non-productive purposes, as litigation, costly weddings and funerals, and in recent years, for liquor and gambling. The borrower is often tempted to take more money than he can hope to pay back, leaving the way for a profitable foreclosure open to the lender. Over five years ago a young swain danced at his wedding while his many guests partook freely of costly food and liquor, at his expense. On inquiring into the financial arrangement for the four days of merriment we were astonished to learn that the young man's father had contracted a loan of two hundred and fifty rupees at 18 per cent interest, giving a field worth twice that amount as security. The family has been struggling now for five years, but they can do no more than keep up the

interest payments,—sooner or later the field will go to the lender.

A co-operative credit society would not make such a loan. The managing committee would probably have explained to the young man and his ignorant father that the most they could afford for a wedding would be about fifty rupees at a rate of interest not exceeding 9 per cent.

2. Accounts are usually kept by lenders only. Seldom does the borrower have any record of his transactions. Innocently, he thinks he will just remember the amount, but in this way he is helpless when the time of foreclosure comes. One case recorded was that of a Bhil cultivator, a sober and industrious man, who had borrowed three hundred rupees and gave his ancestral land worth about fourteen hundred rupees as security. Several difficult years made it impossible for him to keep up his payments of interest. During the frost year of 1929 he defaulted and took a little food grain and about twenty rupees worth of cloth from his lender. He is sure that he paid 'nearly all the interest' each year. Questioned, he could not tell how much remained unpaid but he said, 'Not much'. He was disillusioned when in 1936 his lender foreclosed on him involving his land, his yoke of good oxen and his cart. It appears to be a clear case of extortion, but having no records and lacking the adroitness of the lender the Bhil cultivator was helpless. He now works for three annas per day on the land which had been his own.

In a co-operative credit society accurate accounts are kept both by the secretary and by the borrower.

3. A loan from the moneylender must often be paid back in one lump sum. The difficulty of getting

the full amount in hand at one time causes the borrower to defer payment and go on paying interest indefinitely. The co-operative society fixes definite, easy instalments and as a general rule a borrower is required to free himself from debt within a relatively short time.

4. The moneylender takes greater risks than a good society, consequently the rate of interest is high, ranging from 12 to 80 per cent.

5. Continuous borrowing on the terms of the average lender tends toward the enslavement and deterioration of those who borrow. When interest rates and terms of payment are such that a man can scarcely hope to free himself during his lifetime, he tends to slump into an attitude of mental and spiritual lassitude and despair.

A good co-operative society fosters thrift and works toward the mental and spiritual emancipation of its members. It represents the sum total of their character and personality as they strive to help each other. Once the losses from promiscuous borrowing from private sources are more clearly understood it will be easier for co-operative credit societies to provide the help village people need.

THE FARMER'S NEED FOR CREDIT

A cultivator may need but a small amount of capital but his need is usually very urgent. He may need but twenty rupees for the cost of weeding his crops at the close of a wet season. Failure to secure this promptly may mean much loss to him. Unlike the urban merchant, who can often pay back a loan after thirty days, the farmer will need his small sum for five or six months.

The interest therefore, must be low. An ox may die in the midst of the planting season. He must have funds to replace it without delay, or his crops may be lost. If he is a cotton farmer he will hardly be able to pay back the sum in less than eight months. A good co-operative society exists to help its members in just such emergencies.

CO-OPERATIVE SOCIETIES

There are five general classes of Co-operative Societies; (1) Resource, (2) Producers, (3) Consumers, (4) Home Building, and (5) General Societies.

1. *Resource Societies*

For beginners in co-operative credit there have been formed the ten principles of co-operation.¹

(1) The object of a co-operative society is to enable its members to help themselves. By pooling their savings and taking loans from a central bank they can loan to each other at a reduced rate of interest and on 'helpful terms'. Members are encouraged to save money and become free from debt.

(2) The members should be acquainted with each other and only admit those to the society who are known to be honest, sober and reliable.

(3) Members are liable both jointly and without limit for funds the society may borrow, either from its members or from outside sources. They will therefore

¹ Talmaki, *Co-operation in India and Abroad*, Chapter III. See also, *A Manual for Co-operative Societies in the Bombay Presidency*, p. 52.

be alert to see that loans are made wisely and that borrowers pay their instalments in time.

(4) The managing committee elected by the members in annual meeting must sanction all loans, see that instalments are paid promptly and that accounts are neatly and accurately kept by the secretary-treasurer. By recent ruling a member defaulting in his payments to the society is not eligible to membership on the managing committee.

(5) Money advanced to members must be used for the purpose stated at the time of making application. Money may be loaned for a period up to five years according to the use that is to be made of it. For current expenses, — two years; for the purchase of cattle and farm equipment, — three years; for the payment of old debts or the improvement of land, — five years.

(6) Instalments must be paid promptly or a member is liable for penalty. /

(7) Members will meet annually to elect officers, hear the reports of the secretary-treasurer and auditor and transact any other appropriate business. Each member has one vote, regardless of the number of shares he may hold.

(8) The profits of the society shall be placed in a reserve fund which becomes the joint property of the members. It is the purpose of this fund to protect them in case of special liabilities.

(9) Capital may be obtained from the sale of shares, deposits from members and non-members and by loans from other banks.

(10) The society belongs to the members and they alone are responsible for its management. Inspecting officers will advise them but success or failure is in their

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own hands. Members should study the principles and laws of co-operation that they may be useful in managing their society.

From the subscribed capital, loans are made 'for worthy projects at a moderate rate of interest'. The record of one well-managed society shows the number of loans made to members during a year and to what purpose they were put.¹

| <i>Purpose</i> | <i>No.</i> |
|-----------------------------------|------------|
| To pay for cultivation expense .. | 8 |
| To buy oxen | 3 |
| To buy buffaloes | 2 |
| To improve land | 1 |
| For building homes | 4 |
| For purchasing a cart | 1 |
| For the education of children .. | 2 |
| To pay off old debts | 20 |
| For marriage expense | 2 |

There are two general classes of credit societies, those of limited liability and those of unlimited liability. In case of liquidation in a limited society a member is liable only to the extent of any amount still due on shares that he holds. In some cases he is liable only for such a sum as he may guarantee. In an unlimited society members are responsible for whatever obligations a society may have and if need arises they must pay to the full extent of their property.

Many naturally fear the feature of unlimited liability but in practice this is not as severe as it at first appears. With unlimited liability, members tend to be more alert and the society is usually more carefully

¹ Adapted from a Member's Pass Book.

managed. The incidence of failure is generally less than in a limited society. Should the need for liquidation arise the debts will be paid first from the assets of the society. If these are not sufficient a receiver may be appointed who will collect pro-rata from members until the obligations of the society have been met. In no case is the required amount collected from any one member and a creditor cannot sue an individual member.

2. *Producers' Societies*

To grow crops or produce milk or eggs economically is not the farmer's entire task. He must also be able to sell his products to advantage. One cultivator can do very little alone but through a co-operative sales society the produce of members is pooled, graded, packed and then sold in the name of the society. Due to having a manager with business ability and a greater quantity of produce for sale, the prices obtained are usually better and the cost of handling less.

In India perhaps the greatest progress so far has been made with cotton sales societies. Several of the most successful of these are in Broach District. Members of the Hansot society when consulted seemed well pleased in selling cotton co-operatively. Their opinions as to the chief benefits they derive are noted below:

1. 'There is less trouble and worry at private gins. We take cotton to our own place of weighing and receive a receipt for the amount promptly. At the gin we would sometimes need to wait for several hours.'

2. 'There are no middlemens fees to pay. Local buyers sometimes harass cultivators and persuade them to sell before they are ready.'

3. 'The price is more satisfactory.' It may not be

much more than at the gin but farmers feel better about sales made through their own society.

4. 'We get more accurate weight.' They sometimes fear that at private gins undue reductions in weight are made.

5. 'We like it better.' In this they no doubt express one of the greatest advantages from co-operation. It is a form of education for them. There is experience and a feeling of pride and satisfaction in the management of an enterprise that is their own.

In Bengal a notable beginning has been made in the sale of milk co-operatively. Milk is assembled, pasteurized, bottled and sold in the city of Calcutta. So far most of the societies represent urban capital and enterprise. The management of such a society often calls for a form of leadership not often available in villages. Yet the fact that dairying is strictly a rural home industry and that the demand for pure milk is rapidly increasing would suggest this as a hopeful form of co-operation for village people to enter. The greatest need is an honest, competent leader. Cultivators enter any society cautiously and one case of fraud or incompetence is sufficient to destroy such faith as they may have for many years to come.

EGG SELLING SOCIETIES

Egg selling societies are especially adapted to the needs of small cultivators and those who have no land, as the organization is simple, very little capital is required and they are helpful to those most in need of help.

Nearly every villager of the backward classes keeps a few fowls. In common practice eggs are sold to local

buyers for one or two pice each. Small and stale, they are often worth little more than this. A co-operative egg selling society has at least three purposes to fulfil: (1) To improve the quality of fowls kept by members. (2) To sell superior eggs to those who will pay an increased price for them. (3) To provide helpful experience and education for members.

Members having improved fowls bring their eggs to a central place regularly. Here they are weighed, graded by weight and sent direct to buyers either in nearby towns or in cities. This provides a small but steady income for people throughout the year.

Such a society encourages thrift and the spirit of self-help. Experience in its management provides a basis for adult education. The need for reading circulars and for keeping accounts provides members with an incentive to learn to read. Often the experience gained from helping to manage their society is worth as much to members as the financial help they receive.

HOW AN EGG SELLING SOCIETY FUNCTIONS

The officers may consist of a chairman, secretary and assistant secretary. The chairman apart from conducting monthly meetings will serve as a general helper to the society. The village teacher, if qualified is the ideal person to serve as secretary as he has contacts with many homes through the children, and the school can with great advantage serve as the centre for the society. The assistant secretary for the beginning of a society can well be an older pupil of one of the upper forms in the school. With the help and advice of the secretary he will receive eggs regularly, grade and pack them for sale. The assistant secretary ordinarily



Plate XI: A PUPILS' COTTON PROJECT

(See p. 121)

Plate XII. THE SCHOOL AS AN EGG SELLING CENTRE





receives some remuneration. About one anna per rupee of sales is customary in small societies. Eggs are paid for at least monthly and after deducting the expenses for packing and shipping, each member receives his share of the proceeds.

GRADING AND PACKING EGGS FOR SALE

When possible, eggs should be gathered into a central place daily. They may be kept cool and fresh for several days by placing them in an earthen jar containing clean and moist sand. In warm weather water should be sprinkled both inside and outside the jar as its evaporation will help to keep the eggs cool.

Generally there are three grades of eggs, according to weight.

| | | | |
|--------------------|----|-----------------------|---------|
| $1\frac{7}{8}$ oz. | .. | and upward | Grade A |
| $1\frac{1}{2}$ „ | .. | to $1\frac{7}{8}$ oz. | „ B |
| $1\frac{1}{4}$ „ | .. | to $1\frac{1}{2}$ „ | „ C |

At the time of receiving the eggs they should be weighed and the amount credited to the member who supplies them. His number should be written on each one so that in case of any complaint the supplier can be identified.

If the eggs are to be forwarded by train they should be wrapped in clean paper and packed in an earthen jar. In hot weather the jar may be dipped in water before dispatch in order to keep the eggs cooler.

The increasing demand for fresh, sterile eggs makes this one of the most hopeful forms of rural service. By encouraging and directing this service an alert teacher can often during his spare time render much help to the people both educationally and financially.

Much expense and time are saved by selling eggs through a co-operative society as shown by the following table.

| Customary method of selling | Selling through a co-operative society |
|--|--|
| producer ↓ local buyer ↓ small town dealer ↓ urban broker ↓ retail shopkeeper ↓ purchaser ↓ Producer receives 33 per cent of the retail price. | producer ↓ co-operative sales society ↓ purchaser ↓ Producer receives 80 per cent of the retail price. |

3. *Consumer's Societies*

Such societies have often been the foundation of improvement in other countries but so far they have made little progress in India. The purchase and sale of goods has been entrusted to certain classes for so long, that it does not occur to cultivators how much they could profit by combining together for the purchase of goods, farm seeds, and artificial manures. In some places improved farm implements and pure-bred herd sires have been

purchased co-operatively. When properly used such societies have effected a marked saving to members.

4. *Co-operative House Building Societies*

These are available only in cities till now, although the need for attractive and healthy homes is equally great in the country. The purpose of these societies is to procure capital and loan it to members at a low rate of interest for building homes. The title of ownership for a house remains with the society until the loan has been paid. Money invested in such a house is safe hence the rate of interest to members is relatively low.

5. *General or Non-Credit Societies*

This is a large and widely varied group but we shall mention several of the most common types.

Health Societies. Anti-malaria societies are now being promoted. One person working alone can do little to prevent malaria in the village but all working together can effect a remarkable change within five years. The society may be registered and funds raised from membership fees and contributions. The members in co-operation strive to eliminate malaria through cleaning up the village, draining swamps, spreading oil on ponds and distributing quinine and mosquito nets at reduced prices.

Arbitration Societies. Those who know rural India regret the great amount of time and money wasted in litigation. Lawyers will sometimes press a petty case until their costs are far out of proportion to the issue at stake. One extreme case is noted where two brothers litigated in court for two years spending over Rs. 1,200 concerning the location of a small shed. It

was really their honour that was involved. Before the case was completed the elder brother died, so it made little difference to the surviving brother whether the case was won or lost. Arbitration societies are organized to prevent costly and unfortunate litigation.

Village Improvement Societies. Usually organized in connexion with a co-operative credit society, these are spreading steadily in India, especially in the Punjab and the Bombay Deccan. The model by-laws under which the societies may be registered, provide for taking up any form of improvement such as education, health, social customs or recreation. Though registered, the liability of individual members for debts contracted by the society does not exceed Rs. 20.¹

Societies for the Consolidation of Land Holdings. The Indian Law of Inheritance provides that each heir shall have a proportionate share and quite often a division of each item of inheritable property is pressed at court. Thus if a father's property includes one field and if he has four sons, each may claim one-fourth of the field along with his proportionate share of any other goods.² The result is that the farm land of India has been divided and sub-divided until in some places there are no real fields left, only small uneconomical plots. To prevent such sub-division and to enable enterprising men to get their land consolidated into one or two general plots, societies are being formed for the consolidation of land holdings. The greatest progress so far has been made in the Punjab under the leadership of Mr F. L.

¹ For a more complete discussion see F. L. Brayne, *The Remaking of Village India*, p. 204 ff.

² H. L. Kaji, *Co-operation in India*, p. 116.

Brayne, Commissioner for Rural Reconstruction. Members of an area form a society for the purpose of rearranging their land holdings within the village boundaries. The small plots of land are then sold or exchanged until as far as possible each member gets the land he desires in one or more economical plots. In some cases the land is purchased outright by the Government and resold to the people in blocks or, they can have the same on a long-term lease from the owner.

Due to the capital involved and the need for expert official management such societies are carried on under Government direction.

Societies for the Promotion of Education. There are two general types, (1) Societies for Adult Education and (2) Societies for the Promotion of Education for Children. The societies for adult education are frequently organized in connexion with the village school. They are registered and the officers required are elected. Members sign a pledge to attend adult classes regularly and they pay a nominal fee towards the cost of tuition. The very poor may be exempt from paying fees. The village teacher is usually engaged to conduct the class for which he receives a monthly stipend. In one village the teacher is paid eight annas for each person who passes a test given under the supervision of the local school committee.

In the Punjab alone there are now more than 140 societies for compulsory education.¹ Notable beginnings are being made in the United Provinces and in Travancore.

To interest village people in their own education

¹ S. S. Talmaki, *Co-operation in India and Abroad*, p. 296.

and the education of their children through co-operative effort is a type of service that merits much encouragement. It is this more than anything else that has lifted the people of Denmark to their present enviable social and economic position. No special equipment is required and a teacher with a will to work and a mind to serve can start such a society in his own village.

It must be borne in mind that the methods used for teaching children are not applicable to adults. Helpful suggestions for teaching adults to read are now available in English and several of the vernaculars.¹

Thrift Societies. Thrift societies are 'poor men's banks'.² In almost every village there are oppressed people crowded off to one side. The benefits of the regular co-operative societies are not available to them, as they have neither the cash to purchase membership shares nor the credit to take loans. The co-operative thrift society meets their needs and participation in its management provides practical experience in thrift and co-operation.

The story of one of the early thrift societies is related by a veteran Y. M. C. A. worker.

'When we took up work in—the thing that first impressed us was the extreme poverty of the people. From their drab, empty huts they showed only a casual interest in our coming to their village. There seemed to be little that we could do to help them. I talked with the men of an evening while my wife shared some of our scanty supply of medicines with those who

¹ Laubach, *Psychological Principles involved in Teaching Adults*. National Christian Council, Nagpur.

² Address by Mr K. T. Paul, National Secretary of the Y.M.C.A., Coimbatore 1928.

were ill. All the time we worked and prayed that a way might open whereby we could be of some help to the people. Finally we decided to begin with their poverty for there was plenty of that. Many were Christians but in their distress they had not advanced far.

‘By the time the rain came in June I was intimately acquainted with most of the men. A few had small hill fields that they cultivated largely by hand. Others worked for landlords and were now earning several annas each day. It was then that the opportunity for starting a thrift society, a poor man’s bank, occurred to me. At first it seemed amusing that people so poor should think of saving money. We were sure however that this was the right plan to follow.

‘One evening while seated with some of the men I introduced the plan. They could have their own bank. They could get on by making small savings and using these to help each other. Of the little money they had some was spent on tobacco and some on liquor. Much of that could be saved to their advantage. I did not preach but just talked with them and heard what they wished to say. Sure enough, they wanted to save some money and have a bank of their own. “How much would one anna per week saved amount to in a year?” “And then would there be interest too?” “Yes about four annas”, if they would save one anna per week for a year. Then, if the savings were left on deposit the interest would increase more rapidly.

‘The bank was started right there. I brought a note book and wrote down the name of each man. Opposite his name each wrote the amount that he deposited with me. Those who could not write, and most of them could not, made a “1” mark for each pice deposited. On an

appointed evening each week I received deposits. I often went to the homes of the people and talked with them about their growing account and what it would do for them. There was some rivalry and those who deposited most regularly were encouraged. By the end of the year we had about Rs. 150 deposited on interest in the Central Co-operative Bank. I used much care in keeping everything open so that each could know exactly how much money he had deposited. It was decided by all that we should take out no money for at least two years. By the end of that time we had something over Rs. 400. Some found new sources for earning in order to save more money and place it at interest in the bank.

'At the end of two years one of the men became president of the society and I continued to act as secretary-treasurer. There was no managing committee as we were not registered and everything was done in the presence of all by common consent. If one fell behind in saving or was tempted to draw from his account the others were usually able to suggest a better plan for him.

'It seemed best to use some of the money after two years. The Y.M.C.A. was then distributing pure-bred fowls so five or six loans were made to men who started poultry husbandry. They later joined an egg selling association for forwarding fresh eggs to the city which was a great help to them. Several small loans were made for the purchase of cattle and later a pure-bred bull was bought co-operatively.

'The people were friends and appreciated what we had done for them. Later the society was registered. The members took up work in temperance education and a small school was opened giving the children an

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opportunity in life that their parents had never had. We have always been grateful for the suggestion that led us to open that little society. It is perhaps the most helpful service we have ever done.'¹

SOME OBSTACLES TO CO-OPERATION

In India as elsewhere credit societies have met their share of difficulties. It will be helpful to note some of these as observed by inspecting officers and some thoughtful members.

1. *Lack of a Desire to Co-operate*

Unlike Denmark, the initial steps in co-operation in India have usually had to be taken by Government, Missions and other Service Agencies. Co-operation succeeds best if the will to co-operate springs from the heart of the people. In Denmark the initial steps were first taken by the people as a means for solving some of their difficulties. This gives a measure of loyalty and a feeling of individual responsibility which so far is lacking in India.

2. *Difficulties of Collecting Instalments in Time*

This has been particularly true during recent years. Unfavourable weather and low farm prices both occurring simultaneously have made it impossible for farmers to meet their payments. As a result many societies are in a precarious condition. Again, some debtors accustomed to the more complacent methods of the moneylender do not sense the need for paying up promptly even though they may be able to do so.

¹ Quoted by permission.

Whether from inability to pay or from wilful shirking of responsibility for repayment, the result is the same and thousands of societies are in this way thrust by the members themselves into a state of liquidation. Recently through wise legislation provision is made for the suspension of some payments during poor crop years. While this will help much, only continued education of members and more rigid discipline will save a society where there is defaulting from lack of loyalty and personal responsibility.

3. *Failure to Deposit Money and Buy Shares*

This difficulty is pointed out perhaps more often than any other. One officer who supervises seventy-five societies in an Indian State declared, 'All want to borrow but no one is ready to deposit. When a man has a little surplus cash he loans it privately for higher interest rather than deposit it with his society'. A ruling that members must buy at least one share every year is helping this situation.

4. *Members take little Interest in the Accounts of the Society*

It is important for every member to be sure that his own account as well as the accounts of the society are accurately kept. In one society only eleven out of thirty-five members could tell when asked, what was their credit balance. Such a condition of indifference among members is in itself enough to encourage dishonesty and wreck a society.

5. *Lack of Qualified Leaders*

In co-operation much depends on leadership. One veteran inspecting officer holds that 'everything

depends on having the right kind of volunteer leaders'. It may not be possible to have experienced men in the beginning but they must at least be honest, persistent and impartial.

EDUCATION IN METHODS OF CO-OPERATION

Many of the difficulties in co-operation can be removed by suitable education. Members sometimes remain aloof from their own society as they do not clearly understand its full importance to them. In one village where a society has been surviving merely in name for fifteen years, there was not found a member who knew the ten principles of co-operation. Some suspected mixed motives on the part of officers and feared that their property might be seized in lieu of debts.

While local leaders can do much for the education of members it is especially important that inspecting officers have contact with the members intimately and win their loyalty. It would seem desirable to have a smaller number of societies if need be so as to permit of more personal contact with the members. One alert society where members and officers know each other and work together in an attitude of sympathy and candour may do more good in the long run than many stagnant ones.

Wherever the village teacher is qualified, officers will find in him a helpful ally. He is likely to be impartial and he knows the local people and their special needs. The school might well become the centre for some evening classes held at least once a year for the education of members. Training is provided for many other lines of work and it is imperative that members

of a co-operative society have an opportunity for helpful instruction. A course for member would at least include discussions of the following: (1) Principles of co-operation in relation to their particular village. (2) Accounting. (3) Qualifications for membership. (4) Liability. (5) Farm Management including equipment, capital and rates of interest.

THE PROGRESS OF CO-OPERATION IN INDIA

Progress may be estimated in at least two ways, (1) by counting the number of societies, the number of members and the amount of capital used, and (2) by noting what co-operation has done for the people. The first is easy but to estimate the worth of a society to its members is a difficult task.

If we note the number of societies and their membership the result is rather gratifying. Started in 1904,¹ the co-operative movement can now show 1,00,586 registered agricultural societies having a membership of 30,61,000. While this growth appears satisfactory, yet when we compare figures with the vast rural population we are astonished to learn that only 5.95² per cent of persons are in contact with any society at all. In the Bombay Presidency there are 7.52 members per 1,000 population, in the United Provinces there are 2.81, and in the Punjab 10.85. In terms of the entire population we can say that the co-operative movement has made a healthy growth but its greater work still lies ahead. As yet, societies worth mentioning are not found to any

¹ S. S. Talmaki, *Co-operation in India and Abroad*, p. 469.

² A member represents on an average a family of five persons.

extent among the backward classes where they are most needed.

Turning to help that members have actually received through co-operation there are numerous examples of old debts paid, land improved, homes built, cattle and farm equipment purchased and funds supplied for the education of young men and women. On a recent tour we met members of one society who had purchased land, erected homes, dug wells, purchased cattle and paid old debts, by working together in a spirit of self-help. The presence of an active co-operative credit society has been in many cases a safeguard against usury among moneylenders and there are numerous examples of reduced interest rates.

The co-operative movement has helped to develop a number of volunteer leaders. There are notable examples of teachers, pastors, local bankers and landholders who are giving much of their time freely to local and provincial service. Upon such volunteer service the success of the co-operative movement largely depends. In some cases it still remains for paid officers to emulate the service of volunteer workers in order to give the co-operative movement the quickened moral tone, so essential to its success.

CO-OPERATION IS ADULT EDUCATION

Experience in the management of a good co-operative society has often resulted in the mental and moral emancipation of members. Mental awareness and interest in education and general village improvement are common fruits of co-operation. One veteran volunteer worker declares that 'A spirit of thrift, increased industry and temperance are common results of

co-operative effort'. He values these gains more highly than financial gains. A co-operative credit society is like a school in that members can through practical experience learn the advantages of thrift, industry, honesty and loyalty.

HOW TO START A CO-OPERATIVE SOCIETY?

Success often depends on the manner in which a society is started. At least four conditions are essential.

1. There must be a definite need. Some efforts have been abortive because a well meaning person without studying the local situation merely decided that a society ought to be formed. Exorbitant rates of interest or lack of capital for farming usually constitute a need for a co-operative credit society. If there is a local bank or an independent lender in the village supplying credit on reasonable terms one should think carefully before attempting to start a society. It is safe to say there is need for a co-operative society in every village of moderate size, but a study of local needs will be required to decide what kind, i.e. whether for credit, health, arbitration or education.

2. There must be a desire to co-operate, an inner urge to co-operate for the good of all.

3. There should be a minimum of ten members with the possibility of at least thirty more whose social background and occupation are homogeneous. People of like habits, traditions and occupation co-operate best.

4. There should be at least one gentleman of experience and integrity living either in the village or nearby who will join the new society on equal terms with the others and act as its sponsor at the beginning.

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This will help to give stability to the society and the members will have access to expert counsel.

With the above conditions fulfilled a local leader is ready to call in a district officer for the purpose of organization and registration. The application for registration which is usually the next step must give the following information.

1. Kind of society desired.
2. Nature of the area to be served.
3. Signature of those ready to become members.
4. Statement as to whether or not the prospective members know and understand the principles of co-operation.
5. Statement in regard to the character of prospective members.
6. Do the members promise to make regular deposits and purchase shares in the case of a credit society?
7. Is there a suitable place where the proposed society can have its office or keep its funds and records?
8. Are suitable people available as officers to do the work of the society?

CO-OPERATION IN FARMING

Many speak of India's need for co-operative farming but few have considered what that would mean. In the future, as in the past, India will no doubt find her greatest prosperity and happiness as a land of free and independent cultivators.

There is a great place and need for more co-operation in farming. There are certain tasks that can best be accomplished in co-operation. Among these we would list :

EDUCATION AND VILLAGE IMPROVEMENT

1. Joint ownership of breeding bulls of superior quality.
2. Ownership of certain heavy implements like the bentwood plough (the plough equipped with a mould board for inverting the soil).
3. Ownership and use of levelling and irrigation equipment.
4. Introduction and use of certain improved varieties of crops.
5. Erosion control.

CO-OPERATION AND THE VILLAGE SCHOOL

The village school is often the logical centre for a co-operative society. It is usually well located and is an impartial institution. Meetings should be held here rather than in the home of a member and if the teacher is at all qualified, officers will do well to work through him. There is a great need for co-operation and rural education to recognize each other. The village teacher will need to study and qualify himself to become a competent ally in the movement which is engaged in a task so similar to his own.

With all its difficulties and defects co-operation has well proven itself to be a most hopeful way over which rural people may travel toward improved health, enlightenment and economic freedom.

CHAPTER XI EDUCATION AND THE VILLAGE HOME

THERE is a tendency to consider village improvement as a job for men only. This helps to explain some of the failures that occur in applying reconstruction schemes. The urgent need for more food or better roads has often deflected our attention from what is perhaps the keystone of village improvement,—a beautiful and happy home life. Mr F. L. Brayne has well observed that if women are educated and their status lifted, the villages will soon reconstruct themselves.¹ It is our purpose in this chapter to note several ways in which education may be of help in the improvement of village home life.

THE FAMILY

In an average family there are at least six different relationships; husband-wife, father-mother, father-son, mother-son, father-daughter, and mother-daughter. When we speak of home it is not the house, but the family members in their relationship to each other that we have in mind. Fortunately a happy and worthy home life is not a thing to be purchased with money. It is within reach of both rich and poor. In the first place there must be equality. The life of each one in the home is important and each should have an opportunity for growth and expression. The happiest

¹ F. L. Brayne, *Better Villages*, p. 120.

and most successful homes are those in which responsibility is equally shared between husband and wife. Beauty, love, sympathy and self-sacrifice are some of the virtues that a devoted wife and mother builds into the home. Valour, industry and poise are some of the traits that a worthy husband can bring. Fortunate indeed are the children of parents who regard the home as sacred and strive to bring into it their best physical and spiritual gifts.

THE VILLAGE HOUSE

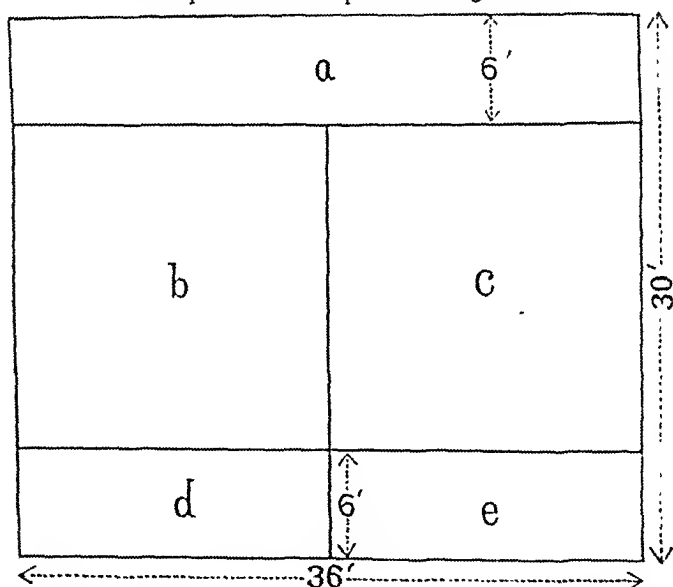
As a dwelling for the family the village house need not be costly but it should be cheerful, comfortable and clean. In its construction provision should be made for an abundance of sunshine and air. This means health and cheerfulness. It is difficult to keep a dark house clean. Insect pests and rodents leave the fields and stables to swarm into the house if it is dark within. We would be astonished to learn how much of our illness is caused by living in dark rooms. Fear of intrusion and theft are mentioned by village people as the chief reasons for not installing windows, yet the advantage of having fresh air and light would seem to justify any risk involved.

Recent reductions in the cost of materials enable men to build more substantial houses than was formerly possible. Considering the expense of maintenance, brick and mortar construction cost little more than bamboo and teakwood. Formerly the foundation was considered one of the most expensive parts of a brick house. We have learned now that for small buildings at least, a trench filled with layers of sand, cinder screenings and broken brick well tamped is in some

respects more satisfactory than a rigid foundation of whole bricks or stone.

Such a foundation tends to expand and contract evenly in all directions as the weather changes, and light structures resting on it will for this reason endure as well or better than those on rigid foundations. The necessary depth for excavation will vary with different soils but three and one-half feet in a gravel soil and five feet in a black soil will usually be sufficient for outside walls, and half this depth for sheltered or inside walls.

Floor plan for an improved village house.



a, d, e—verandas

b, c—living rooms

A double house on the above plan can be built within Rs. 725,¹ considering prices of materials current in Broach District. The specifications are as follows:

¹ See general note on prices to-day.

Foundations:

for outside walls 2' wide, $4\frac{1}{2}'$ deep.

for inside „ $1\frac{1}{2}'$ wide, 2' deep.

plinth $1\frac{1}{2}'$ wide, $1\frac{1}{2}'$ high.

Walls:

outside, 9" thick. (brick set in lime and cement mortar.)

inside, 9" thick. (brick set in clay mortar.)

pillars, for centre and corners, 14" by 14". (brick set in lime and cement mortar.)

Roof: Mangalore tile.

Windows: 2' by 3', teakwood.

Doors: Front, 3' by $6\frac{1}{2}'$, teakwood.

Inside and rear $2\frac{1}{2}'$ by $6\frac{1}{2}'$, teakwood.

Floors: Tamped earth over sand filling.

REMOVING SMOKE FROM THE HOUSE

The average house has no chimney and smoke has to escape through the roof or windows as best it can. Smoke is irritating to the lungs and eyes. It also stains and darkens the walls so that any kind of decoration is almost impossible until it is removed through a suitable chimney. All that is really necessary to remove smoke is a hood or other dome-shaped device placed over the fire, and a metal or earthen tube to convey it upward through the roof. The heated, smoke laden air being lighter than fresh air readily rises upward when a suitable outlet is provided.

LIME AND COLOUR WASH

Lime or any colour wash containing lime makes the house light and cheerful inside. It also destroys germs

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and repels insects. Lime, commonly called whitewash is easily applied and a house owner can do the work himself. Whitewash is especially needed for earthen walls as it enters the crevices which harbour insects. One rupee will purchase enough lime for an ordinary room.

To prepare lime for application, place about four pounds of unslaked lumps, not powder, into an oil tin or large bucket and pour two gallons of water over it. As it 'slakes' it becomes hot, forming a smooth white paste with the water. After this has cooled more water may be added to thin it if necessary. If an ivory colour is desired a little 'yellow earth' may be added. The brush for applying whitewash can be made at home from fibre purchased at a hardware merchant's shop. The fibre is folded, bound with string and one end is cut off evenly to form the brush. The newly made brush is soaked in water for two hours and then pounded lightly with a stone or block of wood to soften the fibre.

DRAINAGE

Drainage of waste water is essential to every home. If water is allowed to accumulate near the house it soon becomes foul and a breeding place for insects and disease germs. Many enterprising men prepare a narrow ditch or cement trough for carrying away the water from the house to a place ten or more feet away, where it is used for growing trees, shrubs, Guinea Grass or crops.

BEAUTY AT HOME

By the use of flowers, trees, and shrubs neatly arranged, the garden about the house may be made attractive at a very small cost. Rooted cuttings of Oleander,

Crepe Myrtle, Hybiscus, or flowering vines like Mrs Bhatt or Rangoon Creeper, may be had from gardeners for a few annas each. Water and sunshine, the two essentials for trees and flowers are the free gifts of God and once such plants are started they will give cheer and beauty to the home for many years. For notes on home gardening see Chapter III.

There are many ways of expressing beauty in the home. The earthen floor is often done with rows of patterns which give it an artistic tone. The neatly plastered earth walls of better class homes, containing little lamp shelves and cupboards and the decorative carving often found on earthen grain bins suggest the sense of beauty that many women possess and the pains which they will take in expressing it. The bead hangings and coloured papier mâché bowls are other forms of beauty which one wishes to see in the homes of the poor as well as the rich.

WOMEN AND GIRLS

We have withheld education from village mothers who, more so than men, are capable of bringing devotion, peace and beauty into the home, if only given a chance. It is still common to find schools intended for village girls and boys at which not a single girl is present. Of the girls attending all the schools in India about 60 per cent are in Class I or below.¹ In practice most of the girls who do get into village schools remain for but a year or two. Consequently relatively few attain literacy. It is estimated in one province, that it takes 'two schools for girls to produce one "literate" per year'.²

¹ *The Indian Year Book*, p. 333.

² All India Women's Conference Report, p. 65.

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When fifty backward class cultivators were asked their opinion as to the amount of education necessary for girls a majority considered Class III sufficient while 10 per cent thought it best to complete Class V. Four out of fifty considered the School Final, or even further education desirable, provided the girl could get a job and earn money. 20 per cent did not consider any education at all necessary.

Unless the number of girls who reach the upper classes in village schools can be greatly increased, we may anticipate that village improvement will be long delayed. Considering the place of women in guiding child life and the importance of the home in any plan for improvement, it would seem that for the present at least, the education of girls is far more urgent than the education of boys. *If rural people will divest education of its academic robes and the concept that it is for men only, and bring it to the villages as a free gift for all, as a means for lightening some of their burdens and enriching their life, it can become a helpful factor in improvement.*

WHAT THE VILLAGE SCHOOL CAN DO

Different schools are helping to meet the needs of the village home in various ways. Many are still doing nothing about it.

Several schools have established an Annual Parents' Day when both men and women are welcomed to the school as guests of the teachers and pupils. The children contemplate the day with joy as they prepare songs of welcome and little favours for the parents who are to come. Going home in the evenings they tell of their plans and the parents are won over to a favourable interest in the school.

For one successful parents' day the children prepared written invitations for all, as a school activity project. At the time of arrival the parents were met by the teacher who seated them on mats in the school garden. After several songs of welcome some children led in worship and prayer. Interesting dialogues followed, after which the teacher and several of the parents who had been previously informed spoke of ways in which the home and the school could be of help to each other. An exhibit of the pupils' handwork and drawing was then opened. Finally simple refreshments were served by the children and a happy and helpful afternoon was brought to a close. The greatest reward from such an occasion is that it quickly establishes even with backward people, the concept that *the school may become a centre of help for all* and its success in this depends very much on the parents themselves.

Another service still undeveloped in India is the Parent Teachers' Association. Both men and women, literate or illiterate may become members by application. Regular meetings are held in which topics of importance to both home and school life are discussed. It is heartening to see the interest that even illiterate men and women will show in subjects like the following when given an opportunity.

1. The most convenient time for opening and closing school.
2. The most suitable time for short and long vacations.
3. A library for home and school.
4. How to promote pupils' home study.
5. Results of the annual medical examination of pupils.

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6. How the home and school can promote pupil hygiene.

7. Food and the health of school children.
8. Discipline at home and in school.
9. Plans for a day of recreation and sports.
10. Profitable use of leisure time.
11. What parents desire from the school.
12. How to procure necessary school equipment.
13. Social and moral difficulties of school children.

Education will hardly advance much farther unless it enters deeper into the hearts and homes of the people. It must become to them a 'pearl of great price', for which they will make any sacrifice. In one school that had been running for over twenty years no one had even passed through class IV. Asked what they expected to receive from education the men showed their low esteem for both teacher and school. To them it was largely a place where their boys could mark time until they were old enough to work in the fields. However difficult the task may seem the only real cure for such stagnation and waste is for the teacher to enlist both school and home in the rewarding task of improving village life.

LIBRARIES AND READING CLUBS

In the homes of many people there are very few if any books or magazines for adults and children to read. Some teachers are helping to supply this need by establishing a local reading club. Members arrange a time and place for meeting and any who are literate will read aloud from selected books for the benefit of all present.

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Grants of money to local committees are often helpful but nothing can be so abiding in its effect as an example of humble service, inspired by love.

3. Consider childhood and youth. Improved sanitation, nutrition or health are not goals in themselves. They are valuable only in their relation to the life of the people. Rural improvement should mean above all a sustained effort to develop and maintain in the villages a generation of healthy, intelligent young men and women who gladly accept rural life at its best, as their rightful heritage.

4. Finally, we should strive for a true agrarian democracy, free from caste and feud, where co-operation is the manner of life and where the life of each one is cherished and preserved.

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